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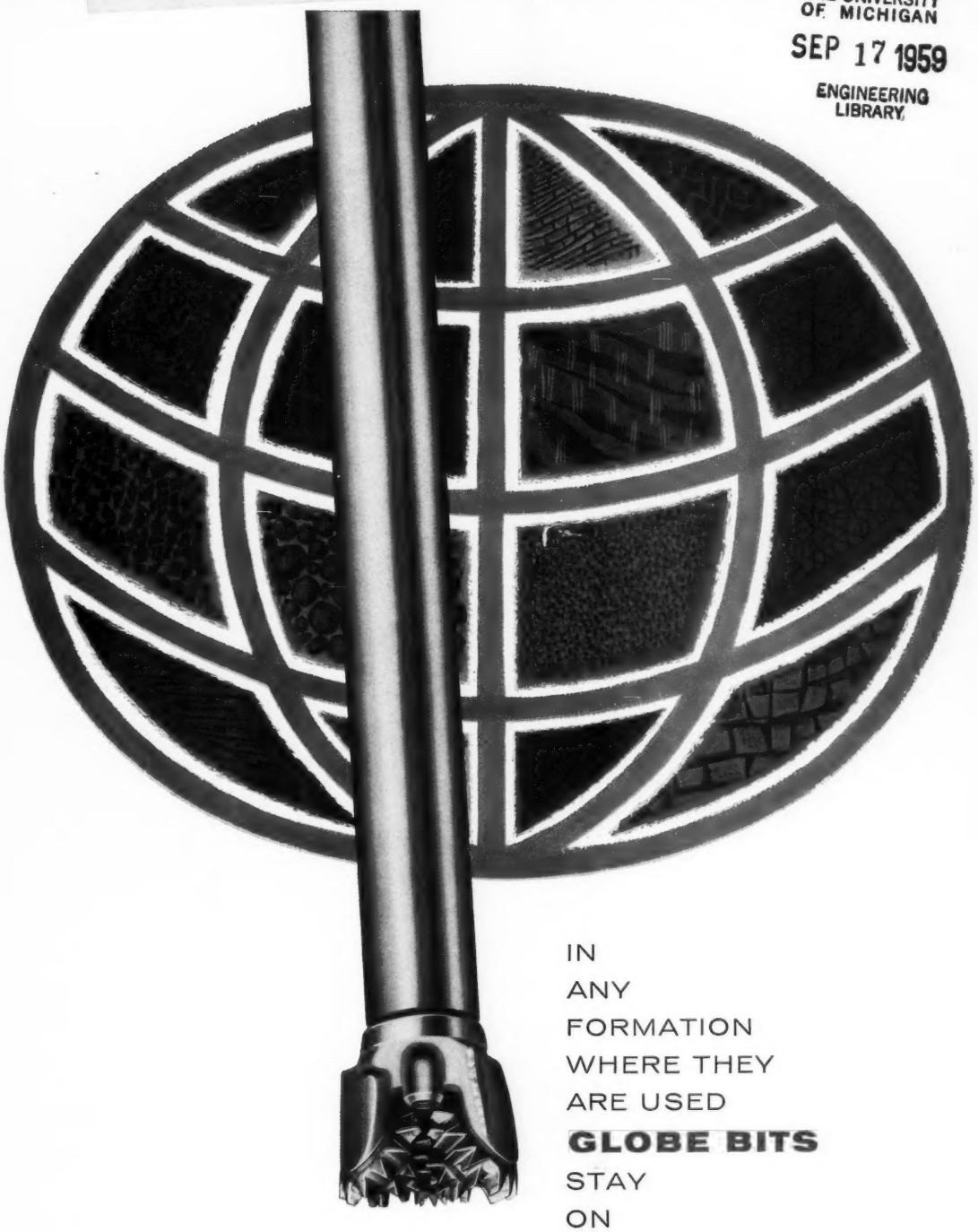

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California PUC Declares Richfield Is A Public Utility Gas Corporation

The California Public Utilities Commission August 6, 1959 issued an interim order in the four consolidated proceedings concerning Richfield Oil Corporation's construction of a pipeline to furnish natural gas to the Southern California Edison Company steam-electric generating plant at Mandalay, in Ventura County.

Commissioner Theodore H. Jenner dissented from the decision which was signed by Commissioners Everett C. McKeage, president, Matthew J. Dooley and C. Lyn Fox. Jenner said he would write a dissenting opinion which he would file later.

Southern Counties Gas Company of California petitioned for a Commission order to Richfield to cease construction of the pipeline. Richfield argued the Commission had no authority to halt such construction.

Since the Commission concluded hearings on the matter with oral argument on June 1, construction of the $5,000,000 pipeline has been completed and Richfield is supplying gas to Edison.

The Public Utilities Commission:

(1) Found that Richfield is a public utility gas corporation subject to Commission jurisdiction;

(2) Refused to order Richfield not to build the pipeline or to order Edison not to purchase gas from Richfield;

(3) Issued two orders of investigation by the Commission to decide (a) whether it should issue certificates of public convenience and necessity to Richfield as a public utility and (b) whether Southern California Gas Company and Southern Counties Gas Company of California should be ordered to file tariffs offering semi-firm gas service for steam-electric generating plants;

(4) Ordered Richfield, within 7 months, to file a tariff for public utility gas service;

(5) Ordered that if Richfield, meantime, sells gas to Edison, both shall keep records of such service, and report monthly to the Commission, in order that when the Commission determines a just and reasonable price for such service refunds may be made by Richfield, if found necessary.

(6) Left open for further negotiations among Richfield, Edison and the gas utilities in Southern California the development "of mutually satisfactory arrangements for providing gas to Edison for its steam generating plants."

(7) Set further hearings to open at the Mirror Building in Los Angeles on September 25 at which the two investigations, the four previous proceedings and another previous application will be consolidated for hearing. Commissioner Matthew J. Dooley will preside.

Edison for some time has been seeking a supply of gas for its steam plants in addition to that available from Southern Counties Gas Company of California and Southern California Gas Company. Edison considers interruptible service unsatisfactory and also wishes to avoid use of oil in standby service because of the air pollutant factor. Edison witnesses testified that utility considered it necessary to obtain a more adequate and reliable supply of gas.

Southern Counties Gas Company filed a complaint after Richfield entered into a contract to supply gas to Edison and began building a 20-inch pipeline from the San Joaquin Valley 56 miles to the Mandalay station of Edison. Edison already buys gas directly from other producers.

Southern Counties previously sought a court injunction to stop Richfield's construction of the pipeline, but the court held that the Public Utilities Commission has jurisdiction in the matter.

Following is a statement by Richfield Oil Corporation regarding the California Public Utilities Commission's decision number 58850, which declares that Richfield is a public utility gas corporation.

The California Public Utilities Commission's recent decision that Richfield Oil Corporation is a public utility gas corporation may have far reaching consequences affecting all oil and gas producers in the State.

Under this decision, it is reasonable to expect that any producer who sells gas to a public utility gas company will be judged a public utility also. The producer will then be subject to regulation by the Public Utilities Commission so far as conduct of his gas operations and prices he may receive for his gas are concerned.

Richfield will ask the Public Utilities Commission for a rehearing and, if a rehearing is denied, will ask the State Supreme Court to review the decision.

The Supreme Court has held in the past that a company cannot be declared a public utility unless it has offered its services to the general public or to all members of a class of the general public, on the same basis. Without this irrevocable dedication to public use of a company's property, it would be deprivation of the company's property without due process of law to declare it a public utility.

Richfield will ask for review by the Supreme Court on the ground that Richfield has never dedicated any of its properties to public use—within the meaning of the law as established by Supreme Court decisions—and therefore has not done the one thing that must be done before a company can be declared a public utility.

It seems to be the opinion of the majority of the Public Utilities Commission (three members signed the opinion, while one member dissented and one was absent) that, because Richfield has sold gas for peaking purposes to Pacific Lighting and Gas Supply Company and has also made two small sales of gas to Pacific Gas and Electric Company, Richfield has dedicated its gas reserves to the public.

The contract with Pacific Lighting calls for delivery of gas to the Richfield refinery for fuel and to Richfield's compression plant in the North Coles Levee field for repressuring purposes in exchange for gas delivered to the gas company by Richfield in various fields. The gas company has the right to purchase gas for peak winter requirements, in an amount equal to what Richfield delivers for exchange. The contract covers the period from April 1, 1955 to May 31, 1960. The gas company has purchased peaking gas twice, during the winter months of 1955-56 and 1957-58.

Two small sales of gas in an area in the Sacramento valley isolated from Richfield's operations and not connected to its pipeline systems, were made to Pacific Gas and Electric.

It should be emphasized that, although an agreement by Richfield to sell gas to Southern California Edison Company gave rise to hearings by the Public Utilities Commission, the commission's opinion was not based on sales of gas to Edison. Rather, the Commission declared that Richfield is a public utility because it sold gas to the gas companies.

The contract with the Edison Company calls for delivery by Richfield of 500 billion cubic feet of gas over a 25-year period to Edison's Mandalay Beach steam generating plant. The gas is to be delivered through Richfield's 20-inch pipeline from the Cuyama and San Joaquin valleys for use only as boiler fuel. This is a sale by a producer to one customer for a limited use.

In its Interim Opinion, the Commission also declared that Richfield has dedicated "its facilities" to public use in another way. Because the Mandalay pipeline traverses "public lands" of the United States, Richfield must obtain a right-of-way from the U.S. Bureau of Land Management of the Department of the Interior, and it has applied for such a right-of-way. Furthermore, because the "public lands" include the Los Padres National Forest, Richfield was obliged to obtain a "Special Use Permit" from the Forest Service of the Department of Agriculture to lay and use the line.

In order to get the right-of-way from the Interior Department and the Special Use Permit from the Forest Service, Richfield had to comply with the requirements of Section 185 of Title 30 of the U.S. Code. This included a stipulation that Richfield would operate the pipeline "as a common carrier to the extent required as to rights-of-way by the provisions of the Mineral Leasing Act." The Commission concluded "that the acceptance of the Special Use Permit by Richfield constitutes compelling evidence of dedication of its facilities to a public use."

Almost every oil or gas pipeline in California crosses "public lands" of the United States, and if the Commission's conclusion is sound, then all pipelines are common carriers to the extent required by Section 185 of Title 30 of the U.S. Code.

While the Commission stated its opinion that building of the pipeline across "public lands" constituted dedication of Richfield's facilities, it seems that the Commission really based its decision on consideration of sales of gas to the gas companies in the light of Section 216 (c) of the California Public Utilities Code which provides:

> "When any person or corporation performs any service or delivers any commodity to any person, private corporation . . . which in turn either directly or indirectly, mediately or immediately, performs such service or delivers such commodity to or for the public or some portion thereof, such person or corporation is a public utility subject to the jurisdiction, control, and regulation of the Commission . . ."

Under the literal language of this section of the Code, a truck farmer who sells produce for distribution to the public through a grocery store is a public utility subject to regulation by the Commission, but of course it has never been given any such application. However, it seems fair to say that if Section 216 (c) is applied to the production of gas, regardless of whether the producer has in fact, irrevocably dedicated his gas to the general public or to all members of a class of the general public, then every producer in California who sells gas to a public utility gas company is a public utility, subject to regulation by the State's Public Utility Commission.

Refuge of the Faint-Hearted

In discussing a proposal which would further put the federal government into the electric power business, a Far Western utility executive* said: "Resort to government ownership is the refuge of the faint-hearted—of those who have no stomach for the coming economic battle with Communism, of those who have no confidence that the free enterprise system has the inherent strength to win the battle."

It will be a grimly ironic twist of fate if, in our conflict with communism, we adopt communistic tactics and ideologies here at home. It is true, of course, that advocates of socialized power despise communism and regard themselves as implacable anti-communists. But it is equally true that government ownership or control of all enterprise, and most especially the basic, natural-resource enterprises, is at the core of the communist system.

*Kinsey M. Robinson, chairman of Pacific Northwest Power Company

Where do you fit in the changing petroleum picture?

records show that 294 refiners have tripled average production—but 160 have succumbed to competition

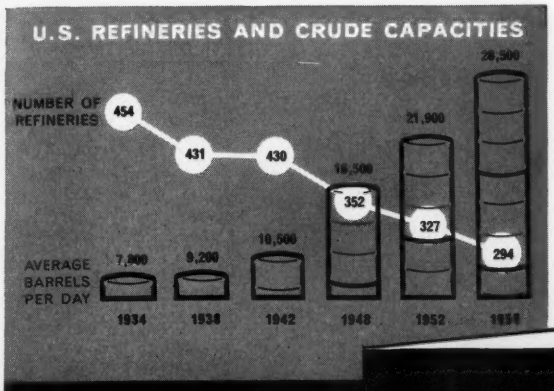
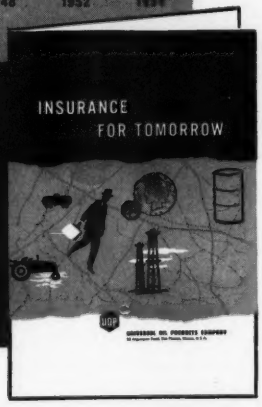


Chart above shows startling shifts in petroleum processing—capacity up, but number of refineries greatly reduced. Brochure at right gives details, suggests how to avoid loss, plan for expansion.



Drastic changes in transportation by road, rail, water and air constantly keep petroleum refiners on their toes. Adding to the complexity of the petroleum refiner's problem are never-ceasing changes in the nature and location of his crude supplies, and of markets for his products.

In this situation there are certain things the refiner can do to avoid losses and capitalize existing opportunities—to utilize his facilities and market potentials to the fullest.

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By RICHARD SNEDDON

The Automotive Cycle

Up to the moment it appears that the most important, or at least most plentiful commodity, produced by the oil refineries is gasoline. To understand this it is only necessary to look at the choked state of our metropolitan streets; the "madding" streams of guided missiles that catapult along most freeways or expressways; the gradual cluttering of the skies with ultra-fast airplanes; and the increasing rise in private ownership of automobiles and planes. It looks as if we have achieved here in America the famed car-in-every-garage objective and are now headed towards the car-for-every-member-of-the-family dream. In any case, ground traffic gets stiffer by the minute and is in danger of becoming so congested as to prevent further motion. Then we shall all have to leave our cars on the highways forever and walk dejectedly home, sobered by the realization that we have reached the end of another transportation era. There are still, of course, many lands in which the automotive interest is young and the opportunities for development are enormous. So if we are of the type who pine constantly for "the good old days" we can always escape to these other world areas and undergo the automotive cycle of life all over again.

Seaways & Airlanes

The same thing that has happened on land and in the air has also taken place on the water. Rowing, paddling, and punting are lost arts, and today the man who doesn't own a plastic cruiser full of internal combustion engines is given a thorough ostracizing and thereafter is positively ashamed to look his friends in the eye. On inland and shore waters, accessible to populous lands, there is usually such a numberless flotilla of small craft that you can walk from one to the other without getting your feet wet. The total scene is a sort of matrix through the cross hatches of which the sea is just barely discernible. On the subject of aviation, private flying too is helping considerably to clog the skyways, and flight, not long ago a crazy idea of the fiction writers, has become as casual as bicycling. I have two friends in Los Angeles who own private planes and think nothing of flying to Dallas, Texas, with their wives on Saturday afternoon to do some shopping. There are hundreds of industrial and other uses for gasoline besides the ones cited, but those mentioned are in themselves sufficient to show why the shape, or shapelessness, as you prefer, of the modern refinery is largely due to the staggering demand for this amazing species of concentrated power.

Separation by Heat

The calorific or heat value of gasoline is the source of its power. However, when and how it delivers that heat are also significant considerations in its evaluation as a fuel, and since heat is an all important factor in many phases of refining, perhaps we can afford to discuss the subject briefly here. To many people, heat was long an intangible something that was almost impossible of measurement. The word itself is from Medieval English *hete* which was the equivalent of "hot" or "fevered." The ancients had a theory that there was a mysterious, weightless substance that flowed into other substances, making them hot; or out of them, making them cold. This nebulous agent was termed "caloric," from the Latin *calor,* "heat." Scientists, however, are a persistent lot and by dint of much probing and prying, they were eventually able to answer the age-old question, "How hot is hot?" If they were to carry on the processes of petroleum refining (and many other industrial systems) with any degree of intelligence, some form of heat measurement was an obvious necessity. Oil men soon learned that the separation of petroleum into a number of useful fractions could be accomplished by the aid of heat. They also learned that the combustion of these fractions could provide heat for endless types of work.

The Gunpowder Plot

But recognition of the nature of the effects was not enough. The voracious researcher not only wanted to know the how of every action and reaction but also the how much. How much heat is required for so much fractionation? How much heat is locked up in so much fuel of a specific type? How much of the heat that is released during the combustion of a fuel under any set of conditions is really translated into useful work? The basis for such determinations had been worked out long before the birth of the oil industry. I remember during my early laboratory experiences in a Scottish iron and steel works, performing calorific tests on coal of which we used a great deal. As nearly as I can remember now we made a gunpowder of a measured quantity of ground coal, poured it into a small metal cylinder and then attached a short length of fuse. At the same time we filled a litre cylinder to the mark with water, mixed it thoroughly and made note of its temperature. Next the fuse was lighted. A cover with a long extended rod attached was placed over the top of the receptacle and when the gunpowder was about due to ignite, the apparatus was plunged into the water in the cylinder.

Calorific Power

Normally, it blew all the water out of the cylinder, dousing the operator and anyone else who was nearby. But, if the gunpowder behaved with some degree of decorum and burned quietly we had a test. As soon as it was all consumed and the last bubble of gas had risen to the surface, the temperature of the water was again taken. Now we had two important pieces of data. The original weight of coal used, (probably 1 gram), and the degrees of temperature its ignition had added to a litre (1000 m.l.) of water. There

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were some corrections to be made for the absorption of heat by the apparatus, including the glass cylinder, and for loss of temperature to the atmosphere, but although the method was not too accurate it did yield a measure of the potential heat producing capacity of the coal that was being tested. We shall discuss calorific power more fully later, but now a word or two about temperature.

Heat Measurement

It had long been known by people of inquiring mind that practically all substances expanded when heated and contracted when cooled. They took advantage of this fact to construct the instrument known as a thermometer, from Greek *thermē,* "heat," and *metron,* "a measure." The device is a familiar one. In its most common form, it consists of a graduated glass column in which there is a capillary bore (remember *gradus,* "a degree," and *capillus,* "a hair"). At the lower end of the fine hairlike bore is a small reservoir containing mercury or quicksilver, open to the capillary only, the top end being sealed. When heat is applied to the bulb surrounding the reservoir, the mercury expands and rises in the capillary. If, thus, we should mark two points on the glass, for example, the exact height of the mercury column when the bulb is immersed in ice water, and again the exact height when it is immersed in boiling water, or the steam that issues from it, we could then divide the section between these two points into any number of even increments and have a scale of heat values. This scale could be extended at the top by etching the glass to show the reading when the bulb is immersed in boiling fuel oil, and similarly at the bottom end by marking the reading obtained when the bulb is held in dry ice, or solid carbon dioxide gas which is the same thing and which freezes considerably below the temperature of ordinary ice.

Thermometer Varieties

That roughly was how thermometers were made and at the present time there are three well recognized scales, Fahrenheit, Centigrade, and Réaumur. The first and third are named for their inventors, Gabriel Daniel Fahrenheit, a German physicist, and René Antoine Ferchault de Réaumur, a French ditto. The third one takes its name from the Latin *centum,* "a hundred," and *gradus,* "a degree." The freezing and boiling points of water on these three scales are as follows:

	Freezing	*Boiling*
Fahrenheit	32°	212°
Réaumur	0°	80°
Centigrade	0°	100°

By a process of simple arithmetic, degrees in any one scale can be translated into degrees in any other. Note first that between the freezing and boiling points of water there are 80 degrees on the Réaumur scale; 100 degrees on the Centigrade; and 180 degrees on the Fahrenheit (212—32).

Equivalents

To convert Centigrade to Fahrenheit, multiply by 180, divide by 100, and add 32.

$$100^\circ \text{ C} = \frac{100 \times 180}{100} + 32$$
$$= 180 + 32$$
$$= 212^\circ \text{ F}$$

To convert Réaumur to Centigrade, multiply by 100 and divide by 80.

$$80^\circ \text{ Re} = \frac{80 \times 100}{80}$$
$$= 100^\circ \text{ C}$$

To convert Réaumur to Fahrenheit, multiply by 180, divide by 80, and add 32.

$$80^\circ \text{ Re} = \frac{80 \times 180}{80} + 32$$
$$= 212^\circ \text{ F}$$

With typical unconcern we here in the United States selected the Fahrenheit scale, the most complex of all, as our standard, although the Centigrade is also widely used in scientific work. The Réaumur scale is almost unknown here but is used to some extent in Russia, Germany, France, and other European countries. Since the relationship between scales has been well established, however, it is an easy matter to compare results of tests or experiments in which temperature is a factor, wherever they may be made and regardless of what scale may be used.

Heat and Work

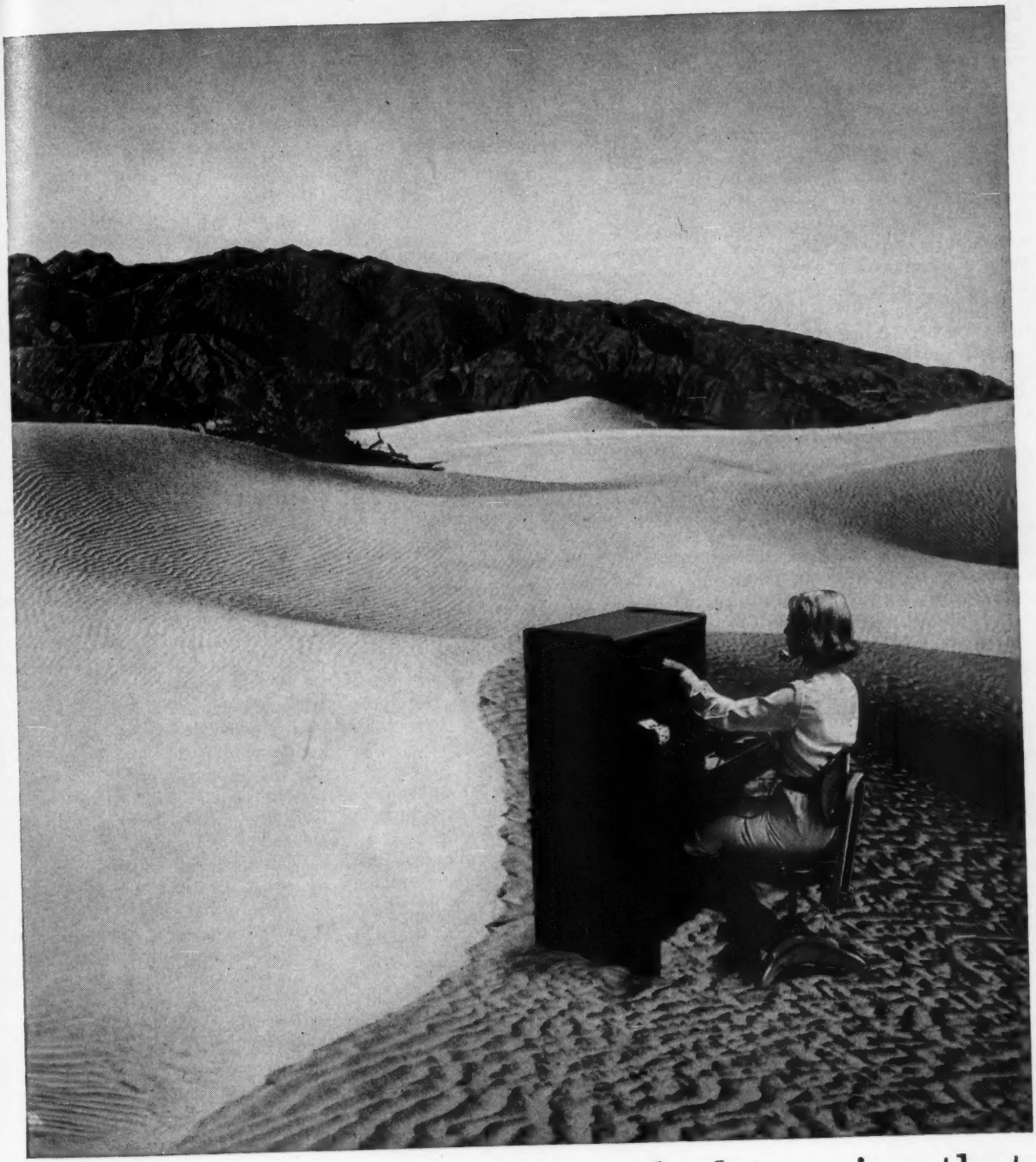
Physicists are now thoroughly agreed that heat is a manifestation of work or energy. When a machinist shapes a piece of steel on his lathe, he has to pour water or some other coolant over the contacting surfaces in order to keep the heat down within reason. When metals are simply rubbed together they become hot and if rubbed long enough and vigorously enough may even melt and fuse together. If, however, we put some effective lubricant between them, the amount of energy expended in rubbing them together is less and they don't get so hot. That is the whole theory of lubrication and is also a demonstration of the fundamental law that the amount of heat produced is directly proportional to the amount of work done.

Kinetic Energy

In another chapter it was pointed out that atomically and molecularly all matter is in a constant state of motion. That, indeed, is one of the difficulties involved in actually obtaining a picture of an atom or molecule. Even if sufficient magnification were available to bring one into view, it and its constituent parts are dashing about with such velocity no camera lens could catch a still picture. It would require an almost impossibly fast micro-movie-camera to bring the entire system into focus. This motion increases as the atoms or molecules of a substance become more widely separated. In ice, for instance, the molecules of water are relatively still; in the liquid state they are much more active; and in steam they are dashing about with inconceivable abandon. It is this internal commotion, known as kinetic energy (Greek *kinetikos,* "motion," *en,* "in," and *ergon,* "work") that we express as temperature. Suppose we put more and more heat units into a gas that is held at a fixed volume by containment in some sort of a vessel, what happens then? Well, the little microscopic missiles hurl themselves at the inner walls of the vessel with greater and greater force in their frenzy to escape and if we continue to raise the temperature they will eventually become so violent in their attack as to burst their way out of any kind of prison in which we care to put them.

Top and Bottom Limits

This is a fair assumption because there is no upper limit to temperature. It is possible theoretically to go on heating indefinitely. It has been estimated by physicists that the temperature of the gases at the immediate surface of the sun is about 6000°C and the temperature at the core of the big ball is a sizzling 40,000,000°C, which gives some idea of the protection space explorers will need if they ever get off course and mistake the sun for the moon. Gold melts at approximately



This oilwoman waits for a telephone ring that can bring the desert to life.

She's part of the huge oil communications network, proud to be in an industry that is helping the desert to bloom. Example: the Four Corners area, where Utah, Arizona, Colorado and New Mexico meet. Here, wastelands are pulsing with new life and industrial vigor—because of oil. The next time you hear somebody speak out against oil—tell him you're an oilman and glad of it. And tell him why.

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1060°C and platinum has a melting point of about 1700°C so if you should ever plan a trip to the sun be sure to leave your jewelry at home. While there is no upper temperature limit, there is a very definite lower limit, known as the "absolute" temperature. This takes its name from the Latin verb *absolvere,* "to be free from" and in this case it means free from imperfection or indisputable. It is —273.1°C and this is the point at which presumably all substance becomes so completely compacted, so dense, that it has no further internal motion (kinetic energy) and hence no slightest trace of warmth.

Recapitulation

Now just to keep everything nice and clear, let us review the distinction between temperature and calorific power, which is easy to do. The temperature of any body is its hotness or coldness, attributable to the internal scamperings of its elemental particles, and expressed in thermometric degrees of one kind or another. Some people can tell atmospheric temperature with fair accuracy, using their aches and pains as a gauge. Steel smelters can often make a good guess at furnace temperatures by the incandescense of the charge. Most of us become uncomfortably aware of the fact when our body temperature jumps just a degree or two above normal. Temperature then is something that we can feel and when part of it is converted to radiance, as in a lamp, fire, or furnace, we do not actually see the heat but we certainly see the evidence of it. We need a precise instrument, of course, to determine temperatures in terms of comparable units, but the human epidermis ("outer skin" from Greek *epi,* "over" and *derma,* "skin") is a reasonably good medium for mere differentiation between hot and cold within normally experienced limits. Incandescense is from Latin, *incandescere,* "to become red hot," and radiance is from the verb *radiare,* "to emit light."

Heat and Power

Calorific power on the other hand is locked up in the atomic and molecular structure of a substance and can only be released by some form of chemical or physical action. Until that happens, it can not be sensed in any way and its ultimate measurement, either in use or in a laboratory test, is in quantity, not degree. The word "calorific" stems from Latin *calorificus* which is made up of *calor,* "heat" and *facere,* "to make," so calorific power is the ability to make heat or energy, in other words, to do work. The swift oxidation or burning of fuel oil, for example, produces heat that converts water to steam; the steam pushes a piston; the piston turns a crank; the crank rotates a wheel; and the rotation of the wheel finally sets a locomotive rolling along the track. Coal does the same thing but not quite so effectively. Even wood can do it. Every substance, indeed, that is oxidizable produces some quantity of heat and heat, as we now know, is the equivalent of work. Thus to provide a basis for comparing the energy value of one fuel with another there arose again the necessity of defining a standard unit of measurement and carefully defined methods of test.

Energy Units

A number of energy units are now employed for various purposes. There is the B. T. U. or British Thermal Unit, which is the quantity of heat required to raise one pound of water 1° Fahrenheit. Incidentally, the little circle that we use as a symbol for degree has no hidden significance as far as can be determined. It was just arbitrarily chosen like the × for multiply or the + for plus. Returning to the main topic, however, the B. T. U. is the unit that is normally employed to evaluate fuels. Then there are the well-known calories, taking their name also from *calor* with which, by this time, we should be completely familiar. First is the small calorie, that is the amount of heat required to raise one gram of water 1° Centigrade at atmospheric pressure; and the large calorie which is the amount of heat required to raise a kilogram of water 1° Centigrade under the same conditions. Gram is derived from the Greek *gramme,* "a small weight" and kilo is "a thousand" from *chiloi,* meaning exactly that.

The Calories

Anyone whose weight is too high, too low, or just right, knows that the calorie is used in expressing the energy value of food. When the fellow in the health food store tells you that a spoonful of honey contains a hundred calories, he simply means that when it is assimilated into the human system it will release an amount of energy equal to 100 calories, to be consumed in such bodily activities as raising an eyebrow or doing the cha cha, depending on what else is taken along with it. One of the larger energy output units is horsepower. This literally is the amount of energy that would be exerted by an average horse in pulling a load. There are some socalled horses around the local race tracks that could drag down that average considerably. It is actually 33,000 foot-pounds per minute or 550 foot-pounds per second, and a foot-pound is the amount of energy required to raise one pound one foot against the gravity pull of the earth. Horsepower is principally used to express the potential work ouput of engines, hence is an important factor both in their design and in their subsequent operation.

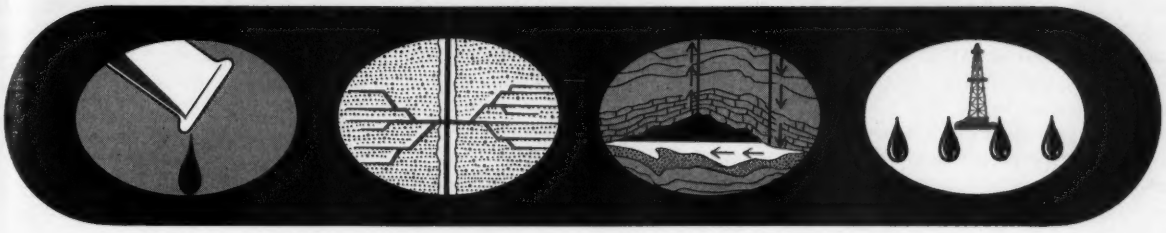
Power of Gasoline

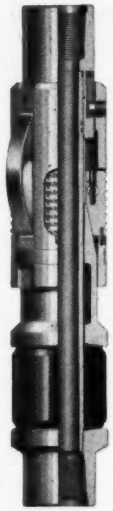
Getting down specifically to the calorific value of gasoline, the latter is composed of hydrogen which has an approximate heat energy of 60,000 B.T.U.'s per pound, and carbon with a potential of 14,500. As these are combined in gasoline, they produce a series of hydrocarbons with an average of something near 20,000 B. T. U.'s per pound. Now that is a much greater energy potential than is found in such high explosives or disruptives as TNT and nitroglycerine, which is very important because heat energy in sufficient quantity is essential in an automobile fuel for maximum mileage. The basic requirement in an explosive is somewhat different. Here the need is for a compound, or mixture of compounds, that under the proper impetus will disintegrate with abnormal rapidity, simultaneously converting the small volume of solid or liquid explosive into a very large volume of gas. It thus imposes an instantaneous high pressure hammer on everything shatterable in its immediate vicinity, Hence the name disruptive which means to break. Explode, believe it or not, is practically the same word as applaud. It is from a comparatively new Latin vocable *explodere,* "to clap" or "applaud," which in turn came from *plaudere,* "to praise." A spontaneous outburst of applause in a theatre is very similar to an explosion, so it is all very logical.

The Gasoline Hazard

Now it should be emphasized here that while gasoline is not normally classified as an explosive, it can produce an explosive mixture that has taken many lives. Most of these lives have been needlessly lost. This is per-

TREATING . . . FRACTURING . . . WATER FLOODING . . . PRODUCING . . .



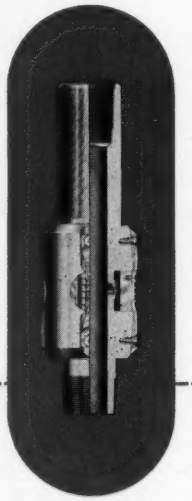


HALLIBURTON'S R-3 TREATING PACKER!

has UNEQUALLED VERSATILITY

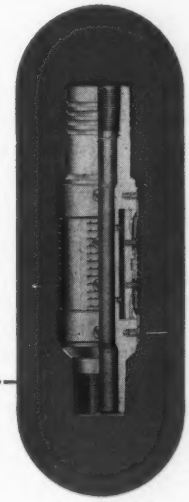
EFFICIENT VERSATILITY... A short, compact, retrievable packer designed for use in treating, fracturing, water flooding or producing wells. Simple in design... easy to operate, low in cost... may be set and re-set as many times as desired on one trip in hole, or moved from well to well. Redressing and replacement of parts is simple. The full opening R-3 packer permits passage of wireline tools, instruments or perforating guns. A built-in safety joint allows tubing to be removed... is easy to drill out, if conditions prevent normal removal.

ESPECIALLY USEFUL IN SHALLOW OR LOW-FLUID WELLS... Run primarily as an upside-down hook wall packer; the R-3 is self-anchoring with no tubing hold down required when run as a tension packer. The packer seal rubbers are available in different durometer hardness to suit various conditions.



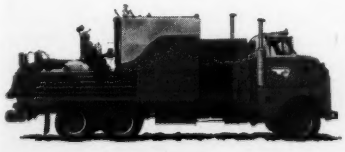
Round Slip Type

THE HALLIBURTON HYDRAULIC TUBING HOLD DOWN... Used with R-3 Treating Packers when set in compression helps prevent upward movement of the tubing caused by the lifting force applied below the packer. The holding power of the tubing hold down is proportional to the lifting force. Halliburton Hydraulic Tubing Hold Downs are available in two types: Round Slip Type and Long Slip Type. Both have identical features, except the Long Slip Type has rectangular slips with greatly increased area for maximum holding power. The setting and releasing of the slips are controlled by tubing pressure in each; both incorporate case hardened slip wickers, fishing neck on top of tool, durable synthetic rubber seal pads, and are easily serviced.



Long Slip Type

The R-3 Treating Packer is available in 4½", 5½" and 7" O.D. casing sizes. Get this versatile, economical tool from any Halliburton Representative.



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HALLIBURTON OIL WELL CEMENTING COMPANY
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284 SERVICE CENTERS—JUST MINUTES AWAY FROM YOUR WELL

haps not exactly the place to preach, but I can't miss the opportunity to point out now as I have done many times before that so far as the layman is concerned, there is one place only for gasoline, that is in the gas tank of a car. It makes me furious every time I read of someone being seriously burned while using gasoline in the home for any purpose whatever. Not too long ago an article in one of our newspapers announced the horrible fate of a woman who was burned to death while boiling gasoline on the kitchen stove preparatory to cleaning a dress with it. Her husband was a refinery worker and it can be well imagined how he felt after this catastrophe. There may be some information a man is justified in withholding from his wife but the danger of using gasoline as a household commodity is not one of them. Gasoline in the tank of an automobile is a lovely liquid that can bring endless enjoyment, but stored in the home or even in the garage it is an ever present menace.

Eliminate the Danger

There are lots of good safe cleaners, but if you find them ineffective for the particular job, take your problem to a professional cleaning establishment, don't experiment with gasoline. Besides being ignitable at very low temperature, gasoline is violently explosive when mixed in quite small proportion with air. It is *flammable,* as the safety experts say, in admixture with air in concentrations between one and seven per cent, and it is not difficult to permeate the air in a home or a garage to the extent of one per cent, with gasoline vapors. However, the maximum explosibility lies somewhere between the two figures mentioned. Just leaving a can uncapped, or storing it in a can with a slight leak can set the conditions for disaster. The fumes of gasoline are heavier than air and they cling close to the ground, slowly diffusing in part into the upper spaces, and at the same time creeping along at ground level. The ground accumulation is just like a fuse. It merely needs to encounter a pilot light or a naked flame of any kind anywhere, and it flashes back quickly to the point of its original emanation for the final blow-up.

The Bad and Good of It

If the mixture gathers in an enclosed place such as the garage, when the car owner comes along and lights his morning cigarette, he can very easily blow himself and the building into rather insignificant increments, which is perhaps enough on the matter of safety for the moment. Just remember to confine your gasoline in the gas tank of your car and explain to your wife and family why you consider that necessary. The very circumstances, of course, that make gasoline dangerous in the home are what makes it ideal as an automobile fuel. When mixed with air in the carburetor of the car, compressed in the combustion chamber, and ignited, it delivers the right kind of power in adequate supply and at just the proper rate of speed. We shall talk more about how the refiner builds this combination of qualities into gasoline in subsequent chapters, meantime please note that the carburetor is simply a device for carburizing air, that is mixing it with carbon, or as in this instance, hydrocarbons, and combustion is a noun made out of an old Latin verb *comburere,* "to burn," of which the past participle is *combustus.*

IPAA Cites Value of Petroleum In U.S.

The value of petroleum during its first 100 years to the nation and to the individual states is detailed in a special centennial edition of "The Oil Producing Industry in Your State," published by the Independent Petroleum Association of America.

The publication, which is being widely distributed both in and out of the petroleum industry, details the oil and gas producing activity in each of 31 producing states. For the first time, it also contains a special section showing the use and value of petroleum during 1958 in all states.

During its first century, the oil industry discovered more than 100 billion barrels of oil reserves in the United States. In that time domestic producers have drilled more than 1,700,000 wells and produced more than 60 billion barrels of petroleum valued at $110 billion.

Of the 1,730,000 wells drilled since the first commercial well was drilled near Titusville, Pa., in 1859, 1,120,000 or 65 percent were oil wells, 135,000 or 8 percent were gas wells and the remainder, 475,000 or 27 per cent were dry holes, the IPAA publication states.

In a further breakdown of the total wells drilled up to this year, the publication charts the total for each state, with Texas, the largest oil producing state, recording 443,827 and Arizona, 42.

The publication also details the total amount of acreage under lease for oil and gas activity. Approximately 25 per cent of the total land area of the United States, or 382 million acres, is estimated by IPAA to be under lease, as of last January 1.

The state breakdown reveals that North Dakota has the highest percentage of total land under lease, 49 per cent. Missouri, with only one per cent of its total area under lease ranks at the bottom of the list.

There are seven states with more than 40 per cent of their land area under lease for oil and gas activity. They are Colorado, Florida, Mississippi, North Dakota, Oklahoma, Texas, West Virginia and Wyoming.

"The Oil Producing Industry in Your State" previously has been published every two years. Beginning with the centennial edition it will be published each year, to provide an annual statistical record of the industry's activities throughout the United States.

For the first time the association has included information on the value of petroleum to the non-producing states. It shows total energy consumed in the form of petroleum, natural gas and coal in each consuming state, plus the amount of fuel and vehicle taxes collected in each state. In Connecticut, for instance, petroleum and natural gas provide more than 75 per cent of the total energy consumed.

In Delaware, the industry supplies more than 80 per cent of the total energy used and in New York, more than 65 per cent of the energy demand is furnished by petroleum.

The publication charts total U. S. energy production from 1900, when all the energy produced was equivalent to less than 5,000,000 barrels of oil daily. In 1958 total energy production equaled nearly 20,000,000 barrels of oil daily.

Pointing out that the United States has enjoyed the highest standard of living in the world, the association states America has been able to maintain this enviable position "largely because of the almost unlimited supplies of energy-producing raw materials (which are available) at reasonable prices."

Only the BAKER Packer does so many jobs so well!

Thousands of varied applications throughout the world are proof of the versatility and performance of this most widely-used drillable production packer.

The basic design has been continually improved to withstand higher and higher temperatures, record-breaking depths and pressures. It has kept pace with the need for more complex multiple completions... yet it is these long-proven, basic features which contribute so largely to its versatility and usefulness...

- *Holds high pressure differentials from above or below—even under temperatures in excess of 300°F.*
- *Pack-off is independent of set-down weight or tension.*
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Though designed for permanent high-performance pack-off, special emphasis has always been placed on drillability. Now, through the use of the new Baker Packer Milling Tool, drill-out time has been reduced by as much as 75%.

Today, more than ever—Only the Baker Packer does so many jobs so well!

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AAODC To Hold October Meet in Oklahoma City

The Annual Meeting of the American Association of Oilwell Drilling Contractors will be held October 11-13 at the Skirvin Hotel, Oklahoma City, Okla.

For this meeting committees have been appointed for: Accounting, Drilling Contracts, Chapter Activities, Education and Training, Insurance, Membership and Dues, Rotary Drilling, Safety, Cable Tool, Publications, Public Relations, Resolutions, Taxation, Transportation and Well Servicing.

Technical papers are being prepared on various subjects which are of interest to the oilwell drilling industry.

Myron Kinley To Speak On "Fighting Oil Well Fires"

Myron M. Kinley, who has gained worldwide recognition for fighting oil well fires, will speak on this subject at the September 15th meeting of the American Petroleum Institute, California Coastal Chapter, at the American Legion Hall in Ventura. The dinner meeting is scheduled for 7:15 P.M. and will be preceded by a Social Hour.

Tickets for this steak dinner at $3.25 each may be purchased from Jim Stroud, Miller 8-2871, or from any A.P.I. Executive Board member. Tickets also will be available at the door on September 15.

SEG To Hear Moho Plan To Drill 7 Miles Deep

New information on the much discussed Moho project will be revealed by R. F. Bauer during his talk on "Offshore Operations in California" during the 29th Annual International meeting of the Society of Exploration Geophysicists in Los Angeles, November 9 through 12. The Moho project contemplates drilling up to seven miles deep to entirely pierce the earth's crust.

Other important subjects among the fifty addresses and papers to be presented include "Progress in Research and Exploration" by Dr. James E. White and Dr. Frank Press, "Tests of an Airborne Gravity Meter" by Dr. L. L. Nettleton and Dr. L. La Coste and an address by E. V. McCollum, President of S.E.G.

The meeting will open with a kick-off luncheon in the Biltmore Bowl, Monday, November 9, followed by three and one-half days of general sessions. In addition to the general sessions there will be special meetings on mining and on research. The general session of Thursday, November 12, will be a joint one with the Pacific sections of American Association of Petroleum Geologists, S.E.G., and Society of Economic Paleontologists and Mineralogists.

There will be a dinner dance, a mining luncheon, an "Early Birds" breakfast, and two cocktail parties. A full program of entertainment for the ladies has been arranged.

General Chairman in charge of arrangements for the meeting is Flint Agee of United Geophysical Co. Program Chairman is Ted Braun of Superior Oil Co. Dean Walling of Western Geophysical is entertainment chairman. A dozen other committees are also working to assure a smooth running meeting.

Kingman Speaker At 6th Electrical Congress

K. E. Kingman, Union Oil Co. of California, was a featured general luncheon speaker at the Sixth Electrical Conference of the Petroleum Industry. The conference was held for the first time on the West Coast, at the Wilton Hotel in Long Beach, August 23-26. Kingman discussed "Electromation in the Petroleum Industry—Present and Future."

Other West Coast men who took an active part in the program were: J. F. Davenport, Southern California Edison Co., Los Angeles; R. D. Chamlee and D. E. McCall, C. F. Braun and Co., Alhambra; J. L. Cunningham and R. B. Pearce, Standard Oil Co. of California, San Francisco; Leonard Jones and Edward W. Messinger, Jr., Union Oil Co. of California, Los Angeles.

One of the highlights of the conference was a field trip to production, transportation and refining installations in the area. WOGA's Joint Electrical Subcommittee assisted with arrangements for the tour. A limited supply of the conference program and registration card is available in the Technical Services Department of WOGA.

T. O. Hall Elected President Of SEG

Exploration geophysicists the world over have elected T. O. Hall, Houston, Texas, president of the Society of Exploration Geophysicists for next year, it has been announced by E. V. McCollum, Tulsa, Okla., current president of the Society. Hall, who is president of General Geophysical Co., will take office November 9th during the society's 29th International meeting in Los Angeles.

Other officers elected by the 5,500-member SEG are: Frank Searcy, assistant manager of Continental Oil Co.'s geophysical section, Ponca City, Okla., first vice president; Dean Walling, president of Western Geophysical Co. of America, Los Angeles, vice president; Phil P. Gaby, partner in Delta Exploration Co., Jackson, Miss., secretary-treasurer; and Nelson C. Steenland, partner in Geophysical Associates International, Houston, Texas, editor. Dr. Steenland will serve a two-year term, McCollum said.

Petroleum Engineers To Hold Annual Meeting In Pasadena

The 1959 annual Fall Meeting of the Society of Petroleum Engineers, Los Angeles Basin section, will be held at Pasadena's Huntington-Sheraton Hotel on October 22 and 23.

Viewed in petroleum circles as one of the industry's most significant technical forums, the meeting is expected to bring together more than a thousand engineers for the two-day conclave. They will hear twenty-six technical papers covering current problems in petroleum exploration, drilling, production and research.

An outstanding feature of the meeting will be a manufacturers' display of the latest equipment and service techniques developed for the finding and producing of oil. A number of the nation's largest oil equipment manufacturers now have elaborate "working" exhibits in preparation.

Reliance Valves for relief,

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Personalities IN THE NEWS

Tidewater Announces Personnel Changes

The naming of eight employees to high level positions at Tidewater Oil Company's Avon Refinery near San Francisco was announced by **Charles R. Brown,** Western Division General Manager, in conjunction with a realignment of managerial functions at the Flying A firm's western manufacturing center.

B. C. Shaul and **C. L. Persyn** have been appointed general superintendent and operating superintendent, respectively, of Tidewater's west coast refinery. Both positions are newly created.

Shaul coordinates and directs the refinery's engineering, maintenance and construction, employee relations, accounting and technology and control laboratories. He is in charge of the plant in the absence of the Western Division's manufacturing manager, **Oscar Larson,** who divides his time between the Avon refinery and the company's Western Division headquarters in Los Angeles to more closely coordinate Tidewater's manufacturing activities with those of other operating departments.

Persyn coordinates and directs activities of all process facilities as well as shipping and utilities at the Avon refinery.

Additionally, in line with the company's policy of greater participation in petrochemical ventures, **E. F. Courtney** has been appointed to the new post of superintendent, Petrochemicals.

H. L. Benson succeeds Shaul as superintendent, engineering, maintenance and construction, and **S. A. Bordi** becomes superintendent, distillation, reforming and treating, the post formerly held by Benson.

C. C. Carmine has been appointed Superintendent, shipping and utilities, succeeding Courtney, while **P. B. Williamson** takes the position of superintendent, cracking, previously held by Persyn.

R. N. Johnson, chief technologist, assumes the newly designated post of staff assistant to the division manufacturing manager.

Another appointment announced by Mr. Brown was that of **J. Milton Connors** as purchasing manager in the West. Conners was previously Tidewater's traffic manager and has been with the Flying A company since 1925.

Du Pont's Petro-Chem Div. Announces Appointments

Joseph G. Evans and **James G. McIlhiney** have been named managers of the Cleveland and San Francisco district offices, respectively, of Du Pont's Petroleum Chemicals Division. Mr. Evans had been manager of the San Francisco district office for the last five years, while Mr. McIlhiney most recently has been a sales representative in San Francisco.

Evans, a native of Franklin, Pa., was graduated from Texas A. & M. College with a bachelor of science degree in mechanical engineering in 1942 and has been associated with Du Pont's Petroleum Chemicals Division since late 1951. He was a sales representative in the Mid-Continent region from mid-1952 until his appointment as San Francisco district manager early in 1954.

McIlhiney, a native of Jersey City, N. J., was graduated from Cornell University in 1935 with a degree in mechanical engineering, and was associated with Air Reduction Sales Company as a sales representative and engineering specialist before joining the Du Pont Company's Chemicals Division in 1947. He was a sales service representative in the Eastern and Gulf Coast regions until 1955 when he was assigned to the division's technical group in Wilmington, Del.

International guests and speakers at the August 12, 1959 meeting of the Los Angeles Chapter of Nomads. From left to right (standing) Ivan Duranthon of Camdrill from France; W. N. Tommy Thompson of Cities Service from Colombia; John F. Drake of Amoseas from Libya; Orville Stanford of Camdrill from Libya; Richard C. Woods of Mene Grande from Venezuela; Yves Bricaud of CFPA from Algeria; Jose Owens of Empresa Nat. de Petroleo from Chile; (seated) B. R. Hawkins of Camdrill from Turkey; J. C. Bazinet of Petrobras from Brazil; H. J. (Cy) Perkins of Rocketdyne Div., North American Aviation, speaker; Al Dysart of International Brown from Turkey; Barney Horan of Camdrill from Libya.

Grant Oil Tool Co. Announces Changes in Personnel

Grant Oil Tool Company has announced the appointment of **Don Etter** as sales manager and **Leland Auer** as chief engineer. Etter was manager and Auer was chief engineer of Cosasco Division of Perfect Circle Corporation prior to Grant's recent acquisition of Cosasco. Auer succeeds Clarence Leathers, who has been promoted to executive engineer of Grant and its MacClatchie and Cosasco Divisions.

Leland Auer Don Etter

H. Y. Hyde Elected To Tidewater Board

Herschel Y. Hyde, Tidewater Oil Company group vice president for manufacturing, marketing and petrochemicals, has been elected a member of the company's Board of Directors to replace the late **David S. Hecht,** according to Company President **George F. Getty II.**

Hyde, who joined Tidewater in 1928 as a research chemist, was elected vice-president for manufacturing for the company's western division in 1946 and, in 1954, was named to head all Tidewater refining operations. He was just recently named to the group vice-president post.

Frank C. Kuhn to New Duties For Petrolite in Canada

Frank C. Kuhn, service engineer for Petrolite Corporation of Canada, Limited, has been named district manager at Calgary, Alberta, to supervise the Western Region as representative for Petreco Division of Petrolite Corporation.

Kuhn takes over the duties of **Grant Jarrell,** former district manager, who has been assigned to Petreco's headquarters at Houston, Texas.

Curwen Appointed to New Position at Jorgensen Steel

H. A. "Jim" Curwen has been appointed to the new position of technical director for Earle M. Jorgensen Co., steel and aluminum distributors.

In making the announcement, president **Earle Jorgensen** stated, "This position was created in recognition of the increasing complexity of metallurgical problems, particularly in the missile and aircraft fields. The critical demands placed on materials by design engineers has made it desirable for us to provide additional service to steel and aluminum users in the form of research, liaison between producers and users, and assistance in application engineering. Knowledge gained through these activities will be passed on throughout our sales organization for the benefit of customers in all territories served by the company."

Curwen joined the Jorgensen company in 1946, serving in sales and as metallurgical engineer since then. He previously spent several years in metallurgical work with the Timken Steel and Tube Division of Timken Roller Bearing Co. and Copperweld Steel Co. He was graduated from Harvard University in 1940, with a degree in chemistry and metallurgy.

In his new position, Curwen will be concerned with technical activities of all of Jorgensen's present service centers (which number seven, in California, Texas, Oklahoma and Kansas), as well as several other locations now planned or already under construction. He will also serve the firm's Forge Division, located in Los Angeles.

Personnel Changes at Ohio

R. M. Wilson, assistant manager of the Shreveport (La.) production division of the Ohio Oil Company, has been appointed assistant manager of the company's Casper (Wyo.) production division, **G. F. Bish,** vice president and manager of domestic production, announced recently.

Wilson succeeds **N. E. Trumbull,** who recently transferred to the General Office at Findlay, Ohio, as a senior planning associate in the forward planning division.

Gendron Promoted At Richfield

Appointment of **John W. Gendron** as general manager of transportation and supply for Richfield Oil Corporation was announced recently.

In the newly-created post, Gendron will be responsible for activities of the supply and distribution department, the marine department and the pipe line department.

Gendron moved to Richfield from Tidewater Oil Company, where his last post was assistant general manager of the Eastern Division. Prior to that, he was assistant to the president at Tidewater. He served as a director of Iricon Agency, Ltd., (a company which holds a five per cent interest in the Iranian Consortium) and was President of Iricon in 1956-57.

He is a member of the American Petroleum Institute and the Petroleum Club of Los Angeles.

John W. Gendron H. A. "Jim" Curwen

F. B. Behrens will assume the duties of assistant general manager of transportation and supply while continuing in the position of manager of the supply and distribution department.

M. E. Tracy has been assigned the position of assistant manager of the supply and distribution department. He has been connected with that department since 1950.

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Hancock Introduces Nine Gasoline Grades

Hancock service stations in the Las Vegas area recently started dispensing nine precision blends of gasoline at nine prices. The revolutionary technique of giving motorists fuels tailored to fit their individual cars as well as pocketbooks has become a reality through the new Econ-O-Blend pump.

Reportedly providing the only new way to buy gasoline in 25 years, the pump dispenses the new Hancock Power Range Gasolines by means of a unique blending at its nozzle. A motorist, after trying a recommended blend, can progressively move to the most economical blend which best fits his car's power requirements.

The principle of custom blending is similar to that of regulating hot and cold water taps at a kitchen sink to get the desired water temperature from a single faucet.

"The pump with a brain," manufactured by Symington Wayne Corporation, automatically controls the proportion of fuels drawn from the Hancock 500 tank and the Hancock top quality premium tank. The fuels are pumped separately through a dual-passage hose to allow mixing only at the nozzle.

By merely changing the dial setting on the pump, the attendant can dispense any one of nine different blends of gasoline. A new setting immediately produces a change in the very first drop of the desired fuel blend.

Wayne pump officials report that the Econ-O-Blend pump meets all official legal weights and measures specifications and has been approved by governmental authorities.

An attractive feature for the dealer is that the Hancock Power Range Gasolines can be marketed without increasing his inventory and without any additional work.

To aid the motorist in selecting the proper blend for his particular car, dealers receive charts suggesting blends for all makes and models of cars dating back to 1954.

At the introductory stage of marketing the blended fuel, the station attendant has been instructed to advise the customer to use the blend recommended by the chart. However, if his car operates smoothly with that particular blend it is suggested that he step *down* to the next grade—and the next lower price. The oil company officials point out that it has been found that there are engine differences even among cars of the same make and model.

Reorganization Planned By Socony Mobil Oil Co.

A plan for reorganization of operations of domestic affiliates of Socony Mobil Oil Company, including General Petroleum Corporation, which is the operating affiliate of Socony Mobil in the western part of the United States, has been announced.

In the past, operations have been carried out partly by the parent company and partly by wholly-owned affiliated companies. Under the new plan, all domestic operations will be combined into a single operating company, Mobil Oil Company.

The announcement was made by R. L. Minckler, president of General Petroleum, and Herbert Willetts, president of Mobil Oil.

Domestic affiliates, including General Petroleum Corporation, with headquarters in Los Angeles; Magnolia Petroleum Company, with headquarters in Dallas; and Mobil Producing Company, with headquarters in Billings, Montana, will be discontinued as separate companies.

It is expected that the process of transfer in the General Petroleum area will not start for several months and that it will take a considerable time for completion. After the transfer, Mr. Minckler will become senior vice president of Mobil Oil.

Howard Supply Named Bethlehem Distributor

Howard Supply Company has been named as California distributor of Bethlehem Steel Company's oil field sucker rods.

The twenty-two-year-old firm will service California oil fields from its six branch offices and a ten-acre main office located in Los Angeles. A complete size range of sucker rods will be maintained in the veteran oil field distributing company's offices in Oakland, Santa Maria, Bakersfield, Taft, Ventura, Fillmore, Long Beach, and Los Angeles.

Besides the sucker rods, Howard Supply Company will also carry a complete line of Bethlehem's petroleum pumping units and the Triplex and Duplex piston utility pumps.

State-wide service will be a policy of the new distributor.

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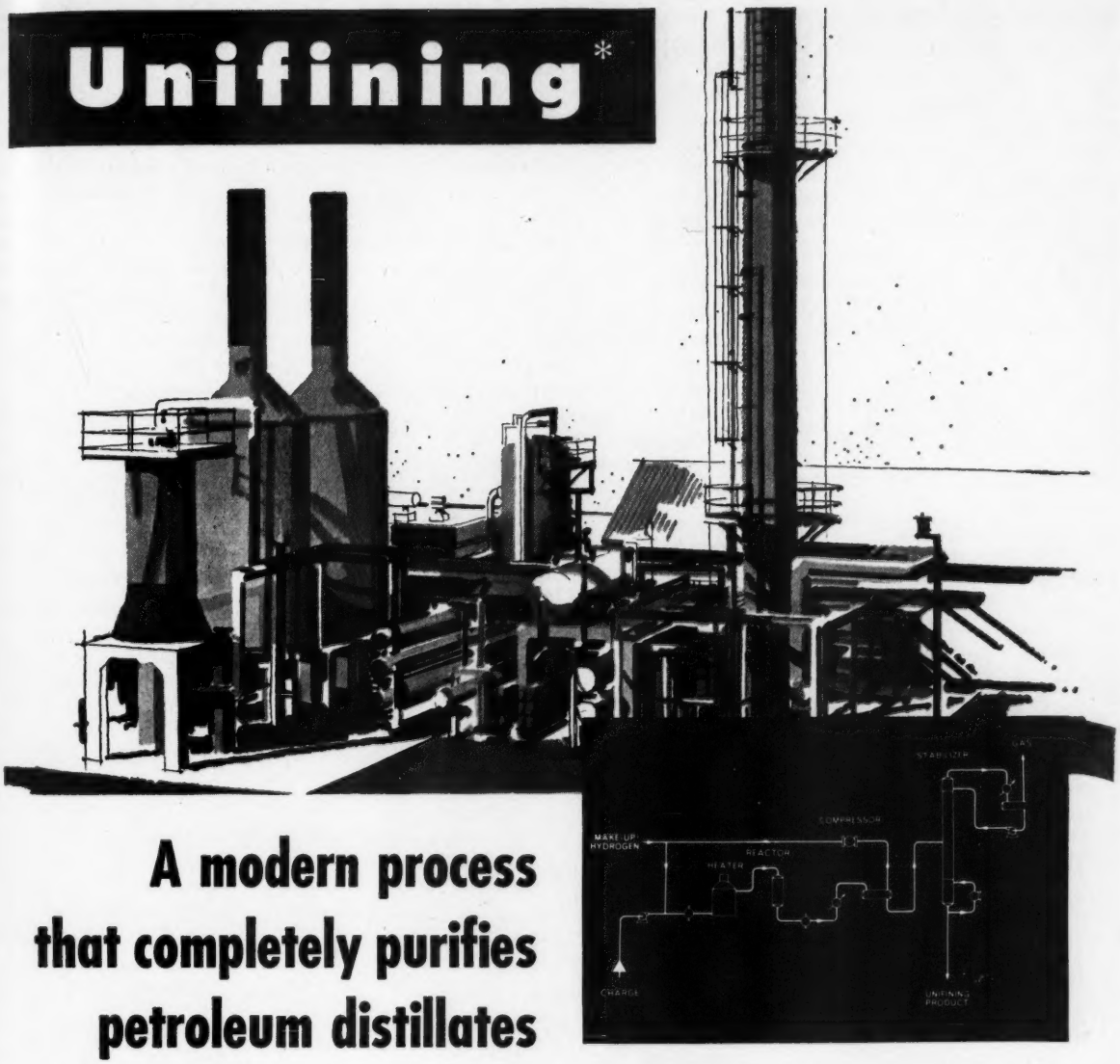


A modern process that completely purifies petroleum distillates

Here is an efficient and economical answer to an operating problem that often proves costly and difficult to solve. An uncomplicated and easily operated process, Unifining eliminates sulfur, nitrogen and metallic impurities from petroleum distillates, and prepares feed stock of ideal properties for further processing.

In the Unifining process, simultaneous saturation of olefins also occurs, producing ideal virgin-like products that make further processing easier, or give greater stability to fuel oils.

This process works particularly well in combination with Platforming®. It is ideal for pretreating Platformer feed stocks, and the excess hydrogen from the Platformer constitutes a low-cost hydrogen supply for the Unifining unit. For long, durable operation Unifining uses an exceptionally rugged catalyst called Hydrobon®, manufactured by Universal.

Developed by Universal Oil Products Company in conjunction with Union Oil Company of California, Unifining is available through UOP to all refiners.

*Trademark

UNIVERSAL OIL PRODUCTS COMPANY

30 Algonquin Road, Des Plaines, Illinois, U.S.A.

More Than Forty Years Of Leadership In Petroleum Refining Technology

Water Flooding Project Underway at Long Beach

Progress is being made in the world's largest water flooding project now underway at Long Beach Harbor. Announcement of the completion of two additional water injection plants within the next 30 days, has been revealed by Sam Roberts, subsidence control director for the City of Long Beach.

The plants (one on Terminal Island and one on the mainland), will serve to stabilize the land sinkage at the most critical portion of the harbor. Their vast network of water distribution lines with a planned capacity of nearly one-half million barrels per day, will serve fault blocks 2 and 3, which covers the critical Naval Shipyard area.

Cost of the island plant is estimated at $975,800, plus the cost of drilling 41 injection wells. This plant will serve all water injection wells on the island, including those whose well heads are in the Naval Shipyard. The proposed capacity is 157,000 barrels per day.

The mainland plant's cost is estimated at $1,992,900, excluding the cost of drilling of 57 injection wells. This plant will serve all wells drilled north of the Cerritos Channel. The proposed capacity for the Mainland Plant is 297,000 barrels per day.

The consulting engineering firm of M. A. Nishkian and Co. of Long Beach was retained by the City of Long Beach to perform the preliminary studies and final design for both plants and their water distribution systems.

The purpose of the systems is to take salt water from source wells and to distribute it to injection wells to be injected into the subsurface at high pressures ranging from 850 to 1250 psig," states Nishkian.

The water distribution system consists of steel pipe run above ground where possible and underground where natural or artificial barriers prevent above ground installation. At each injection well head, an orifice type meter will measure and record the injection flow rate to the well. A flow control valve or beam will also be placed in the line at each injection well to provide a means of regulating and adjusting flow rates.

Injection salt water will be supplied by source wells on both the Mainland and Island plants. The natural filtration of the salt water by the earth, and its low oxygen content, make its use preferable to the use of untreated sea water. The source well pumps are all stainless steel deep well submersible turbine type pumps that discharge through a pressure control valve to a desander. The pressure control valves serve a dual function of pressure control and dump so as to insure a constant supply pressure and continuous working of the wells. Source water is piped from the desander through plastic coated steel pipe to the pumping plants. Chemical treatment of the injection water is provided by proportion chemical feeders at the source well and injection pump suction. The chemical treatment is provided to act as a corrosion inhibitor in the pumps and distribution system and to prevent bacteria growth in the entire system and injection wells.

A total of twenty-nine injection wells are scheduled for the first phase to arrest the critical fault blocks 2 and 3. Similar operations have halted sinkage of land over a large area in the vicinity of Pier A. Encouraged by its success, a full-scale water injection program is now underway which will eventually encompass the entire Wilmington Oil Field, an area of 20 square miles. The field has 6800 acres developed and 5200 acres undeveloped. It is the nation's second wealthiest oil field reserve. The subsidence has been halted in 500 acres and the rate of subsidence has been reduced in an additional 700 acres.

Signal First-Half Earnings, Sales Up

Signal Oil and Gas Company's net income for the first six months of 1959 was $8,658,272, equal to $1.00 a share, as compared with $8,325,589, or $0.96 a share, for the same period in 1958, it was announced recently by Samuel B. Mosher, chairman of the board.

First-half sales for 1959 were $80,-130,788, a 15% increase over the $69,-588,120 reported by Signal for the first six months of 1958.

In commenting on the outlook for the remainder of the year, Mosher said: "During the last half of 1959 we expect to show an increasingly favorable earnings comparison with 1958 figures. This would be due primarily to increased production from Signal's operations in Lake Maracaibo, Venezuela."

"As for Signal's long-term future," Mosher continued, "our position in the petroleum industry will be strengthened significantly by the forthcoming acquisition of Eastern States Petroleum and Chemical Corporation; stockholders of each company are scheduled to vote on the proposal in September. In addition, we anticipate increased reserves from operations in Argentina, and plan to start drilling in Guatemala before the end of this year. Signal also is a participant in a joint venture which will begin exploration of large holdings in Western Canada this winter."

Pauley Completes Producer off Mexico

The dual completion of a "substantial" offshore stepout well in the Santa Ana Field, Gulf of Campeche, off the State of Tabasco, Mexico, was announced recently by Edwin W. Pauley, president of Pauley Petroleum, Inc.

The well, Santa Ana 281, tested a total of 2,340 barrels per day, 38° gravity oil on a restricted choke. It is located about 3,700 feet northeast of the discovery, Santa Ana 239, and was drilled to a total depth of 8,700 feet passing through 10 oil producing sands.

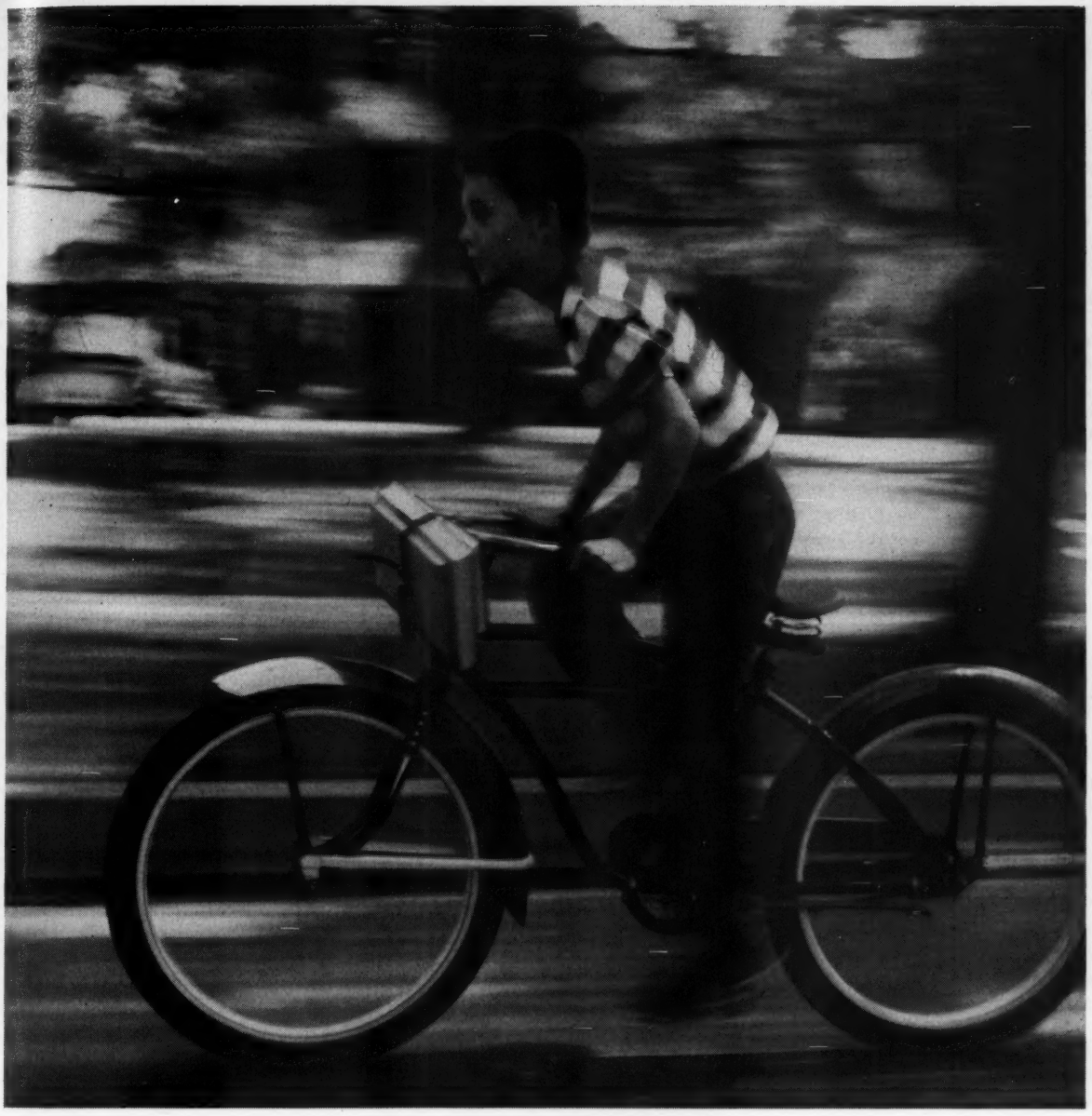
The upper zone of the stepout, at 5,720 feet, tested 744 barrels per day and the lower zone, at 8,031 feet, tested at 1,596 barrels per day. It was drilled by Pauley Pan American Petroleum Co., a wholly owned subsidiary, from a barge about one mile offshore in 55 feet of water.

The discovery well, Pauley stated, also was dually completed between 7,000 and 10,000 feet and tested a total of 1,684 barrels per day of 38° gravity oil on a restricted choke. It has been shut-in pending completion of pipeline and storage tank facilities.

Pauley said flow lines have been laid from both wells and that production facilities onshore would be completed within a few weeks. Both wells will be placed on production within 30 days.

Pauley Pan American is developing the Santa Ana offshore field under one of its contracts with Pemex, the Mexican governmental agency which has the responsibility for all oil and gas operations in that country.

Pauley Pan American has completed arrangements to move in four additional pieces of drilling equipment to expedite development. Of these, two are marine rigs—a mobile barge and floating barge—and two are land based rigs for slant drilling operations.



TRAINED to be strictly on his own...

Ever notice the look in a kid's eyes the moment he gets on his bike and heads off? It's the first recognition of independence as he strikes out for school, a friend's house, or "just to see what's going on." For here in the saddle seat, he's his own boss...the rider going into an adventure...the decision maker.

And, today with more and more cars on every street of every community, his decisions have to be right—they play a major part in getting him home safely.

To teach youngsters their obligations as users of the roads, General Petroleum is distributing a color film strip "How to Ride Your Bicycle Safely." It is available to schools throughout the West. It is another one of the many efforts General Petroleum is making to benefit America's younger citizens.

General Petroleum Corporation
A SOCONY MOBIL COMPANY

Mobil

Tidewater Earnings Up First Half 1959

Tidewater Oil Company indicates an $18,600,000 consolidated net income for the first-half of 1959, compared with $279,000 for the 1958 first-half period, president George F. Getty said recently.

Indicated net income applicable to 13,852,949 shares of Tidewater common stock, after providing for preferred dividends, was $17,100,000 or $1.24 per share for the 1959 first-half, compared with a loss of 9c per share for the first-half of 1958.

Net working capital of the Company has continued to improve. The 1959 capital budget has been increased 14% over previous estimates.

Factors in this substantial improvement in earnings over 1958 were increased crude oil and natural gas production, higher sales volume and improved refinery thruput, Getty said.

Production of crude oil and natural gas liquids during the first half of 1959 reached the highest level in the Company's history, he said. Production of 112,000 barrels daily during the first half of 1959 was an increase of 16% over the same period in 1958, and production of 115,000 barrels daily in the second quarter represents an increase of 24% over the like 1958 period.

Production increases have resulted from Tidewater's stepped up drilling program, Getty said. Producing wells completed totalled 128 in the second quarter of 1959 and 214 for the full 6 months of 1959, the largest number of wells completed during a six months period in the company's history.

The drilling program during the first half of 1959 on Tidewater-owned properties in the San Joaquin Valley of California resulted in an increased production of 4,000 barrels daily, Getty said, and added more than 17,000,000 barrels to Tidewater's reserves. Offshore Louisiana production potential and reserves have continued to improve, Getty said.

Gasoline sales volume increased 16% over 1958 in the company's present marketing area, according to Getty, helped by the company's continuing expansion of marketing outlets, and were well above the industry average.

A Good Answer

A short time ago the Senate dealt—as it has on many a past occasion—with the depletion allowance which is granted to the producers of oil and gas, but not to other elements within the petroleum industry.

That allowance—which amounts to a credit against federal income taxes—is 27½% and has been for about a generation. The Senate's recent action had to do with a proposed amendment which would have reduced the rate to 15% on a graduated scale. Debate occupied three hours and filled 24 pages of the Congressional Record. Both sides had ample opportunity to present their arguments for and against the proposal.

Result: The Senate voted the proposal down by the top-heavy majority of 54 to 21, and the 27½% rate thus remains in effect.

A person who is not acquainted with the peculiarities of oil production might logically ask this question: "Why, at a time when another federal deficit may be pending, and it has been necessary to raise the national debt limit, and Congress is scratching about for all the tax revenue it can get, should it have overwhelmingly voted down a reduction in the depletion allowance?" That's a good question and it has a good answer. The Senate voted as it did because oil is vital both to this country's economy and security, and an adequate depletion allowance is an absolute necessity if men are to take the long risks that are an inescapable part of finding and producing oil. Only one in nine wildcat wells finds any oil—eight wells wind up as worthless holes in barren ground. The proportion of wells which strike oil in commercial quantitiesis far smaller still. And even in proven areas the cost of drilling wells has zoomed, due to increased wages, increased material prices, and the need to go deeper and deeper underground.

The Senate majority, in sum, simply examined the depletion allowance issue with care—and then voted the way that serves the national interest. It deserves a round of applause for that important action.

Increased Earnings Reported by Reserve

Reserve Oil and Gas Company has reported gross income of $1,820,690 for the first six months of 1959, compared to $1,477,930 reported for the comparable 1958 period. Cash income (net income before dry holes, depreciation, depletion, amortization and abandonments) increased to $1,297,439 from $1,091,606 for the first six months of 1958.

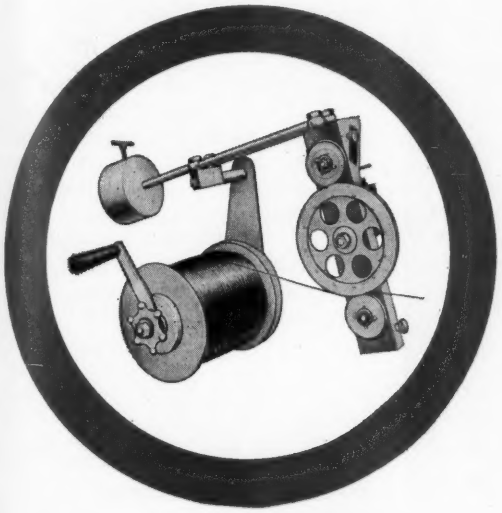
These increases were due, it was explained, primarily to the company's development program in association with others in the North Tejon Area of Kern County. Under this program, six deep wells have been completed since the first of the year and four additional wells are currently drilling. On the company's Reserve-Sunray-Tejon property to the south two good gas-condensate wells have also been completed since the first of the year. These completions have raised Reserve's crude oil production to an average of 3,000 barrels per day and natural gas sales to an average of 3,950,000 cubic feet per day for the first six months of 1959, compared with 1958 figures of 2,550 barrels of oil and 1,470,000 cubic feet of gas.

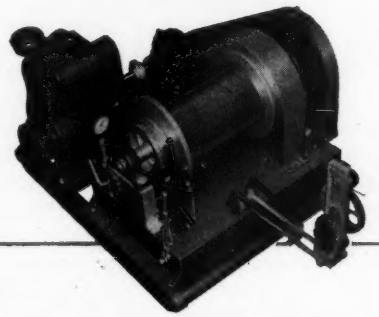
It was also reported that unaudited net income (before income taxes, if any) for the first half of 1959 was $451,345, or 36 cents per share on the 1,243,185 shares outstanding, compared with 1958 figures of $448,996 and 36 cents respectively. Dry hole expense rose to $195,457 in the first six months of 1959 as a result of increased exploratory drilling, compared with charges of $55,563 for the 1958 period. Depreciation, depletion, amortization and abandonment charges increased $151,173 in the 1959 period over the comparable 1958 period.

Working capital stood at $1,109,873 on June 30, compared to $1,059,278 on June 30, 1958, after reducing the amount owed under a revolving bank credit agreement from $400,000 at the first of the year to $200,000 on June 30.

DETERMINES DOWNHOLE DEPTHS...

HALLIBURTON MEASURING DEVICES





HALLIBURTON SUPER-DUTY POWER-DRIVEN MEASURING ASSEMBLY

Designed for wire line service work that requires large amounts of .066", .072", .082" and .092" diameter measuring line or for smaller amounts of 1/8", 9/64", 5/32", 1/4" or 5/16" diameter cable. The super-duty reel, powered by an 8.25 hp Wisconsin AEN Engine as standard equipment, can perform severe oil field wire line and conductor work and is capable of taking heavy stresses and cable pull. This unit permits fast recovery of instruments from even the deepest of wells having a heavy mud system.

A special Halliburton Measuring Device calibrated for cables of 1/8" to 5/16" diameter or 9/64" shooter line is available. Reel carrying capacity ranges from 18,700' of 1/8" cable to 3,000' of 5/16" diameter cable.

Developed more than 35 years ago to provide accurate measurement for the correct placement of cement slurry, Halliburton Measuring Devices have undergone continuous improvement to insure unsurpassed accuracy in determining downhole depths. Today, this measuring line method, pioneered by Halliburton, is universally used to measure cement displacement during cementing of surface, intermediate and oil strings of casing. Guess work and possibility of miscalculation are virtually eliminated; exact depths may be read directly from the counter on the measuring device in feet or meters.

Because of its simplicity, effectiveness and extreme accuracy, the Halliburton Measuring Device is used by oil operators all over the free world for many applications apart from oil well cementing:

- *Accurate measurement of well depths.*
- *Running instruments for bottom hole temperatures and pressures, fluid samples, and the like.*
- *Running mechanically operated paraffin cutting tools.*
- *Running Halliburton Dump Bailer Limit Plugs or other types of tools in casing or open hole.*
- *Running shifting tools through tubing in changing chokes and seating nipples.*
- *Running crooked hole survey instruments.*

Halliburton Regular Duty, Heavy Duty, Extra Heavy Duty or Super-Duty Measuring Devices can be operated and driven by gasoline, diesel, electric or air power motors. Standard units are operated from rear wheel of car, or cathead operation. Halliburton Measuring Equipment is available for use in your well, regardless of depth. For more information, call or write for your free copy of the illustrated bulletin, "Halliburton Measuring Devices—Unsurpassed For Accuracy."

HALLIBURTON MEASURING EQUIPMENT

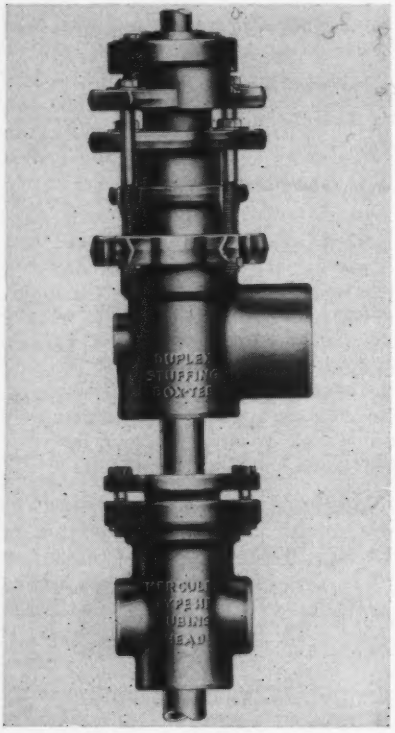
HALLIBURTON OIL WELL CEMENTING COMPANY • DUNCAN, OKLAHOMA

"A Measure Of Accuracy—For All Downhole Requirements"

Hercules Announces Slim Hole Drilling Production Equipment

The Hercules Tool Company of Tulsa, Oklahoma has recently developed and is marketing a line of Slim Hole Drilling production equipment, according to S. P. Tschappat, president.

The increasing use of 2½" tubing for casing and 1¼" or 1½" tubing as the oil string, for greater economy, has made it necessary to develop new equipment specifically for this purpose.



The upper part of the Slim Hole Well hook-up is a Hercules Tee Type Duplex Stuffing Box for 1¼" or 1½" tubing sizes. The combination Tee and Stuffing Box has a female thread and screws directly onto the tubing, eliminating one threaded connection and resulting in a considerably shorter hook-up.

The lower part of the Slim Hole hook-up is the Hercules Type HF Tubing Head. This tubing head has a one piece, pressure cast body with 2" side outlets. Hinged slips and other safety features are standard as in all other Hercules tubing heads.

These, as well as all other items in Hercules Slim Hole production line of equipment, are available through supply stores.

Standard to Add Chemical Plant at Richmond Refinery

Plans for construction of the West's first plant for the manufacture of the chemical Maleic Anhydride were announced recently by Fred Powell, President of California Chemical Company, a subsidiary of Standard Oil Company of California.

The multimillion dollar unit will have a capacity of 20,000,000 pounds of the chemical annually, Powell disclosed. It will be built at Standard's refinery at Richmond, California, and is scheduled for completion by mid-1960.

Marketing of the plant's output will be carried on by California Chemical's industrial chemical subsidiary, Oronite Chemical Company, T. G. Hughes, President.

While part of the new plant's production will be processed into other chemicals sold by Oronite and by California Spray-Chemical Corporation, another Standard subsidiary, the capacity of the unit will be sufficient to serve fully requirements of Oronite customers throughout the West and East of the Mississippi, Powell said.

Feed stock for the new plant will be Benzene, which the company now produces in quantity.

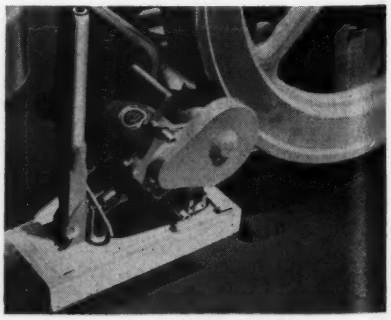
Maleic Anhydride is a chemical intermediate widely employed in production of plastic for boats, auto bodies and household appliances, high-grade paints, textile wetting agents, and agricultural chemicals.

Oronite, which operates in the field of industrial chemicals is already a major marketer of Phthalic Anhydride and Isophthalic Acid, both of which are used for similar purposes as Maleic Anhydride. California Spray is one of the country's leading manufacturers and marketers of agricultural chemicals.

Wichita's New Portable Electric Pump Starter

The new Wichita Portable Electric Starting Unit for single cylinder engine driven pumps makes starting faster and easier. Just one unit can start any number of engines equipped with a Wichita mounting bracket. The electric motor is powered from any pick-up truck 6 or 12 volt battery and is applied near the carburetor for easy adjustment while cranking. Gives greater hp and more starting torque. It is solenoid started, gear reduced and safety enclosed.

Starting button is located in top of operating handle. For complete details and cost write Wichita Engineering Company, 3345 Arthur Street, Wichita Falls, Texas.



Wichita's New Portable Electric Pump Starter

New Director Division Of Mines, Anchorage, Alaska

James **A. Williams** has been appointed Director of Division of Mines and Minerals, 329 Second Avenue, Anchorage, Alaska. **Richard V. Murphy,** Petroleum Engineer, is now on duty at Anchorage. He will be joined about September 1st by **Philip R. Woodside,** Petroleum Engineer.

National Offers New Separation System

The National Steam Generating "Production Pak" is a pre-piped, skid-mounted, three-phase separation system with a steam generator, manufactured by National Tank Company, Tulsa. This production unit is especially designed to produce wells that require pre-heat before choking down to separator pressures.

Automatic controls and valves maintain absolute control over water bath temperatures and sales gas leaving separator. Use of a steam generator to heat the separator base and well stream in place of the conventional water bath heater method permits a higher MTD and less area requirement plus a convenient and dependable means of moving heat to the base of the separator. Separator and generator are code stamped, and the unit is equipped with National's Flame Arrestor to prevent back flash.

These units have been proven in service in Oklahoma, Kansas and the Texas Panhandle.

National's Steam Generating Production Units are available in sizes from 2.5 MM cf/d to handle single, dual and triple completed wells.

New "slim hole" tubing joint introduced by Jones & Laughlin Steel Corporation for multiple completion oil and gas wells is shown in these views. Coupling (left) is machined down to outside diameter of 2¾ inches, which is 5/16 inches smaller than A.P.I. threaded and coupled external upset tubing. J&L engineers say the new 2⅜-inch tubing offers operators an economical solution to problem of limited clearances in multiple completion wells.

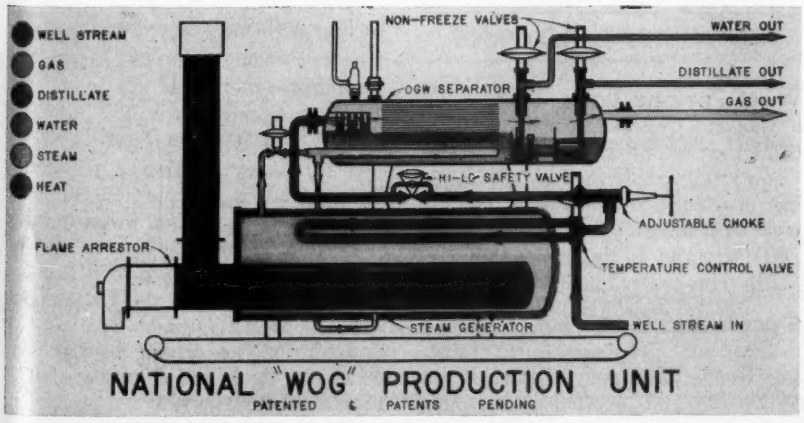
New Duties for Executives At Engineered Oil Tools

Engineered Oil Tools, Inc., the Houston based manufacturer of the Johnston Hydraulic Pumping Unit for producing oil wells by artificial lift, and other related engineered production equipment, has announced a realignment of duties of two of the company's executives.

Peck Meier, formerly manager of sales for the Southern Division, has been named general manager for Engineered Oil Tools, Inc.

Blaine Johnston, formerly the general manager, has assumed new duties as vice president. In his new position, Mr. Johnston will divide his time between engineering development work and equipment sales in the field.

Meier will be located in the company's Houston headquarters, while Blaine Johnston will reside in Dallas.



According to a State of Alaska Division of Mines & Minerals bulletin, "the Department of the Interior is considering releasing the 9,000 acres on the Gubik Gas Field structure that lies with the buffer zone adjacent to Pet 4 for competitive bidding." Colorado Oil & Gas Corp. is awaiting disposition of this land before drilling its Gubik acreage. Reportedly, the Military has made an informal offer to purchase gas from the Gubik Field at 75c per 1000 cubic feet.

Field Development

Pacific Coast and "4" Corners

LOS ANGELES BASIN

Long Beach Redrill

W. S. Payne, Jr. and John B. Deuel, Operators, are preparing to redrill and deepen Ryder No. 1-A located near the intersection of 25th Street and Rose Avenue on Section 30-4s-12w. The well, originally completed by the Seaview Oil Company in 1950 at a depth of 2640 feet, will be deepened to 3240 feet and recompleted in the Alamitos Zone.

Saugus Well Redrills

Standard Oil Company's N. L. & F. 12 No. 1 was unable to recover a fish and is plugging back to redrill. Located in the southwest quarter of Section 16-4n-16w, the well had reached a total depth of 13,295 feet before running into trouble.

Capistrano Test Abandoned

Humble Oil & Refining Company, after drilling and coring to a total depth of 5126 feet on O'Neill Estate No. C-3, was plugged and abandoned. The Strat. test was located in the southwest quarter of Section 3-8s-7w.

Elizabeth Canyon Test Drilling

John A. Kochergen and Herbert A. Schisler are drilling below 1000 feet on Benson No. 1 located in the southwest quarter of Section 8-5n-16w.

In the same area on Section 7-5n-16w, Seattle-Toledo Oil Company's Seattle-Toledo-Lyons No. 1 drilled to 4029 feet and will run 5½" casing for a production test.

West Newport Test

Red Star Oil Company drilled to 2660 feet and is fishing drill pipe on Red Star-B.P. & S. Associates No. 2 located in Section 12-6s-11w near the intersection of Atlanta and Newland Streets. The test will be bottomed at about 3200 feet.

Esperanza Area Wildcat

Wm. N. Thornbury, Inc. has graded location for A.U.W.C. No. 3 located in the southwest quarter of Section 20-3s-8w, one mile southeast of the Esperanza field production. Atlantic Oil Co. has the contract to drill this 3000 foot test.

Two Potrero Recompletions

General Petroleum Corp. recompleted two wells in the field, both in Section 34-2s-14w and both originally completed by the Basin Oil Co. Potrero No. 5 was recompleted from the perforated interval 3966-3922 feet flowing 580 b/d of 46.0 gravity oil cutting 2 per cent. Total depth is 4200 feet with 7" casing cemented gravity oil cutting 2 per cent. Total depth is 4200 feet with 7" casing cemented at 4200 feet. Potrero No. C-6, with a total depth of 3761 feet and 7" casing cemented at 3761 feet, squeezed off the original perforations and reperforated the 7" at intervals from 3547-3506 feet. Recompleted on a gas lift, the well was good for 200 b/d of 39 gravity oil cutting 6 per cent.

Tapia Canyon Completion

Intex Oil Company completed Hartje No. 4, located in the southeast corner of Section 31-5n-16w, pumping 35 b/d cutting 0.1 per cent. Total depth is 1312 feet with 8⅝" casing cemented at 121 feet and a 4½" liner landed at 1308 feet and perforated from 1198-1308 feet, and cemented through perforations at 1164 feet. Top Yule Sand was placed at 1200 feet.

NORTHERN CALIFORNIA

West Perkins Lake Test

Kenneth Sperry is drilling below 6000 feet on Smith No. 1, a Glenn County wildcat, located in the southeast quarter of Section 12-20n-2w. The well will be drilled to approximately 7000 feet and is three miles west of the Perkins Lake Gas Field.

Occidental Gas Test

Occidental Petroleum Corp. is drilling below 3200 feet on Occidental-Wilbur No. 1-18 located in the southeast quarter of Section 18-14n-2w in the Arbuckle area, Colusa County. The Company has acquired a one-half interest in approximately 34,000 acres from the Western Gulf Oil Co. The leases surround the Arbuckle Gas Field which has 12 producing wells. This first of the ten scheduled tests is about 3½ miles northwest of the field.

Sacramento County Deeper Pool Discovery

In the Walnut Grove area, Brazos Oil and Gas Co. completed Locke Unit No. 1 as a deeper pool discovery flowing 1300 mcf of gas per day from the Lower Zone, perforated from 7702-7722 feet and 7776-7786 feet, and 1035 mcf of gas per day from the Upper Zone perforated from 3700-3680 feet. The well, located in the southeast quarter of Section 26-5n-4e, was drilled to a total depth of 8503 feet and has 5½" casing cemented at 7902 feet.

McDonald Island Test Abandoned

After running an electric log and sidewall sampling, Natural Gas Corp. abandoned Tilden Community No. 2 at a total depth of 6415 feet. The original hole was drilled to 5607 feet and plugged back to 2700 feet and redrilled directionally.

Glenn County Gas Test

Honolulu Oil Corp. is preparing to drill Rabo No. 1 located in projected Section 6-19n-1e. This 4000 foot test is approximately five miles east of the Llano Seco Gas field.

Yolo County Gas Test

In the Capay Canal area, Rinde Oil Co. is grading rig site for Stephani No. 1 located in the southwest quarter of Section 28-9n-1w. The well will be drilled to approximately 4500 feet for a test of gas sands in the Upper Cretaceous. Brown Drilling Co. has the contract for the drilling of the well which is three miles north of the Pleasant Creek Gas field.

August 27, 1959—Oil's 100th Birthday

A Great Day for Every Oil Man and Woman

100 years ago Colonel Edwin L. Drake drilled the first commercially successful oil well.

Of all the many uses for petroleum during the past century—as an illuminant, a lubricant, a source of chemicals—its most important use has been *as a source of abundant, low-cost energy.*

The progress of any nation can be measured by the amount of energy it consumes—for heat, light, transportation, agriculture, industry.

We in America produce and use 40% of all the energy consumed in the world—enjoy the highest standard of living in the world. More than two-thirds of our energy comes from oil and natural gas.

By August 27, 1975, America's energy needs will have doubled. Oil and natural gas will be called upon to supply two-thirds of this need—or 30% more energy than we now derive from all energy sources combined.

Every oil man and woman shares a quiet pride in the progress of our first century—and confidence in our ability to meet the challenges of the second.

As we look ahead to our second century, we join all other American business and industry in giving thanks for America's unique climate of freedom—from which all *past* success has come . . . on which all *future* success depends.

Committee on Public Affairs
of the
American Petroleum Institute
50 West 50th Street • New York 20, New York

Contra Costa County Completion

Trico Oil and Gas Co. completed Faria Unit No. 3 flowing 1200 mcf of gas per day from the Lower Zone and 1800 mcf of gas per day from the Upper Zone. The Lower Zone is producing from the perforated interval 1947-1910 feet and the Upper Zone from perforations within the interval 1649-1570 feet. Both are new producing zones. Located near the north quarter corner of Section 21-2n-21w, the well was drilled to a total depth of 2500 feet and cemented 5½" casing at 2100 feet.

New Pool Discovery

Brazos Oil and Gas Co. completed Sunray-Brazos-Vistario-M & T No. 2 as a new pool discovery flowing 2200 mcf of gas per day through a ¼" bean and was shut in. Located in the southeast quarter of Section 15-4n-4e, the well was drilled to a total depth of 4500 feet and cemented 5½" casing at 4203 feet. Flow is from the perforated interval 4105-4096 feet.

West Vernalis Well Testing

Porter Sesnon et al and Great Basins Petroleum Co. may have a new gas field discovery in San Joaquin County if a test now being made on Sesnon-Vernalis No. 22-5 is successful. The zone being tested is at the top of the Ragged Valley Silt, logged at 4562 feet. Zone is below the Blewett Sand and above the Tracy Sand. Located in the center of the northwest quarter of Section 5-4s-6e, the test was drilled to a total depth of 5450 feet and cemented 5½" casing at 5010 feet.

Solano County Shallow Completion

After drilling to a total depth of 6621 feet and failing to develop deep sand production, G. E. Kadane & Sons' Standard-Suisun-Community No. 10-B was plugged back inside the 9⅝" casing to 911 feet, and on a test of the perforated interval 665-654 feet the well flowed 850 mcf of gas per day through a ⅜" bean with pressures of 250/410 psi and was shut in. Location of the well is in the southwest quarter of Section 31-4n-1w.

Texaco River Island Completion

Texaco Inc. completed and shut in Wilson-McCall No. 2, flowing 100 mcf of gas per day through a 3/16" bean. Located in the northwest quarter of Section 1-4n-4e, the well was drilled to a total depth of 5000 feet. A string of 4½" casing was cemented at 3076 feet and cement cleaned out to 3045 feet. Casing was then perforated from 2928-2918 feet.

Vernalis Field Well

Porter Sesnon et al and Great Basins Petroleum Co. are preparing to spud Sesnon-Vernalis Unit One No. 26-14, located in the northwest quarter of Section 14-3s-6e in San Joaquin County. Hagestad Drilling has the contract.

COASTAL AREA

South Mountain Completion

In the Bridge area, Shell Oil Co. completed Saticoy No. 14 flowing 1200 b/d oil cutting two per cent through a 24/64" bean from the Upper Zone and 560 b/d oil cutting one per cent through a ½" bean from the Lower Zone. Located in the northwest quarter of Section 22-3n-21w, the well was drilled to a total depth of 10,708 feet and redrilled to 10,240 feet. 5½" casing is cemented at 10,220 feet with perforations from 10,220-9542 feet and 8932-8236 feet.

Padre Canyon Well Deepening

General Petroleum Corp. is drilling below 5500 feet on Padre No. 52 located in Section 15-3n-24w. The well was first completed in 1953 from a depth of 4360 feet. The company is preparing to spud Padre No. 105 also located in Section 15-3n-24w.

Bardsdale Field Test

Kenneth H. Hunter is starting Robertson No. 3, a proved field well, located in the northeast quarter of Section 12-3n-20w.

El Rio Test Suspended

Standard Oil Company has suspended operations on Montalvo Ranch No. 1 after drilling and coring to a total depth of 14,036 feet. Location of the test is in the southeast quarter of Section 16-2n-22w.

Offshore Test Abandoned

Standard Oil Company's Gaviota offshore test, Standard-Humble-Gaviota-State No. 2-A, located in projected Section 3-4n-32w, has been abandoned at a total depth of 8567 feet.

Summerland Offshore Well Completed

Standard Oil Company's Standard-Humble-Summerland State No. 4, located in projected Section 35-4n-26w, was completed and shut in after drilling to a total depth of 10,759 feet. Completion details were not released.

Shiells Canyon Completion

Texaco Inc. completed Elkins No. 20 flowing 370 b/d of 32.0 gravity oil cutting ten per cent through a 40/64" bean with pressures of 200/600 psi and 622 mcf of gas. Located in the southwest quarter of Section 5-3n-19w, the well was drilled to a total depth of 14,206 feet and was plugged back and redrilled to 6600 feet. 7" casing is cemented at 6975 feet and a 5" perforated liner hung at 5982 feet.

Texaco Santa Barbara County Test

In the Refugio area, Texaco Inc. is grading rig site for Texaco-Monterey-Rutherford No. 1 in the southeast quarter of Section 1-4n-31w. Location of the test is ¾ mile south of the Sunray Mid-Continent's Freeman-Rutherford No. 1, a new Gas Field discovery completed in 1958 from the Sespe formation flowing 4000 mcf of gas through a ¼" bean.

Cat Canyon Field Test

Getty Oil Company is grading location for Los Alamos No. 52 on Section 6-8n-32w. Location falls 5624 feet south and 735 feet east from the E¼ corner of Section 36-9n-33w.

Simi Test

John Hetman is preparing to spud Well No. 1, a shallow test, located in the southwest quarter of Section 36-3n-18w.

Gosford Well Deepens

Signal Oil and Gas Company is cleaning out and preparing to deepen KCL No. 43-14 from its present depth of 8496 feet. The well, located in the northwest quarter of Section 14-30s-26e, was drilled and abandoned by Hancock Oil Co. in 1952 and is ¼ mile west of production.

SAN JOAQUIN VALLEY

Wheeler Ridge Test

In the Windgap area, Richfield Oil Corp. is grading location for ROCO-MJM&M-Banks No. 56-30 in the southwest quarter of Section 30-11n-19w.

Wheeler Ridge Completion

In the Windgap area, Richfield Oil Corp. completed Tejon-A No. 62-31 flowing 30 b/d of 55 gravity oil cutting 20.0 per cent through a 12/64" bean. Gas was gauged at 700 mcf per day. The well, located in the northeast quarter of Section 31-11n-19w, was drilled to a total depth of 9050 feet and plugged back to 8885 feet. 7" casing is cemented at 8813 feet.

Fresno County Wildcat Test

Hondo Oil Company of Fresno has staked location for Well No. 1-A, a 9500 foot test, to be drilled in the northwest quarter of Section 36-16s-14e, approximately 20 miles north of Coalinga.

Two Pyramid Hills Tests

Humble Oil and Refining Co. is drilling below 1000 feet on Orchard No. B-1 located in the southwest quarter of Section 12-24s-17e, two miles northwest of Pyramid Hills production.

Lyle A. Garner has graded location for Jack No. 36-1 in the southeast quarter of Section 36-24s-17e. The well will be drilled to approximately 2000 feet to test the Eocene and Cretaceous sands.

Antelope Hills Completions

Shell Oil Co. completed Williams No. 277-6 pumping 200 b/d oil cutting two per cent from a plugged depth of 2425 feet and a total depth of 2880 feet. 6⅝" casing is cemented at 2271 feet. Location of the well is in the southeast quarter of Section 6-28s-20e. Williams No. 275-6, also in Section 6, was completed from the perforated interval 2443-2294 feet pumping 200 b/d oil cutting 2.0 per cent. Total depth of the well is 2445 feet and 7" casing is cemented at 2325 feet.

Gosford Test for Universal

Universal Consolidated Oil Co. is grading rig site for Statex-KCL No. 65-14 located in the southwest quarter of Section 14-30s-26e. R. B. Montgomery, Inc. has the contract to do the drilling.

East Bellevue Wildcat

Richard S. Rheem, Operator, is grading rig site for KCL No. 54-36 located in the northeast quarter of Section 36-29s-26e one mile northeast of Bellevue field production.

McDonald Anticline Completion

W. & L. Landco Inc. completed Theta No. 1 flowing 100 b/d of 38.0 gravity oil cutting 1.0 per cent mud through a 12/64" bean. The well was drilled to a total depth of 2960 feet and has 5½" casing, with perforations from 2960-2920 feet, landed at 2960 feet and cemented through perforations at 2920 feet. Location of the well is in the northwest quarter of Section 20-28s-20e.

Fruitvale Test Redrills

Ferguson and Bosworth's G.P.-KCL No. 38-20 drilled to a total depth of 5005 feet and was plugged back to 2590 feet and is being redrilled in a westerly direction. Location falls in the southwest quarter of Section 20-29s-27e.

OTHER STATES

Alaska

Richfield Oil Corp. is preparing to move in equipment to drill Kaliakh River No. 1 in Section 34-20S-14E in the Cape Yakataga area. Clyde Hall has the drilling contract.

Alaska Consolidated Oil Co. is drilling below 10,220 feet on Antonio Zappa No. 1 in Section 18-5s-23w in the Iniskin Bay area. 7" casing will be run and jet perforated and hydrofrac'd. The company is preparing to hydrofrac the Iniskin Unit Operators "Havenstrite" No. 1 drilled in 1955 to a depth of 9747 feet.

General Petroleum Corp.'s Bristol Bay area test, Great Basins No. 1, located in Section 2-27S-48W is drilling below 9300 feet.

Union Oil Co. and The Ohio Oil Co. are drilling below 12,500 feet on Union-Ohio-Kenai Unit No. 1 in Section 6-4n-11w on the Kenai Peninsula.

Pan American Petroleum Corporation, Pan American Building, Tulsa, Okla., is planning to drill a well in the Napatuk Creek Area in the Bethel Basin of Western Alaska.

Arizona

In the East Boundry Buttes area, Apache County, Texas Pacific Coal and Oil Company completed Navajo Tribal No. 138-1 pumping 250 b/d of 38 gravity oil cutting ten per cent. The well, a Mississippian discovery located in the northeast quarter of Section 11-40n-28e, was drilled to a total depth of 6080 feet and cemented 7" casing at 5824 feet. After recovering water on a test of the interval 5649-5669 feet, the well was plugged to 5636 feet and 7" casing perforated from 5589-5566 feet.

Washington

Tideland Oil and Gas Corporation abandoned Tideland-Weyerhauser No. 7-11 at a total depth of 5990 feet. The test was located on the southeast quarter of Section 7-11n-10w in Pacific County.

Wn.-Cal Exploration Company has taken over the Utah Consolidated Oil Co'.s Swanson No. 22-1 in Section 22-18n-12w and plan to deepen the well from its present depth of 4381 feet. The test is located near Copalis Beach in Grays Harbor County.

Russell A. Cobb, Jr. has staked location for Merrill-Ring No. 1 in the northwest quarter of Section 4-31s-11w in Callam County. The well will be drilled to about 7500 feet to test the Lower Blakeley Sands.

Tiger Mfg. Co. Moved To New Headquarters

Tiger Mfg. Co. moved to new headquarters August 15th. Located at 2312 W. Pacific Coast Highway, Long Beach, the new facilities are larger, giving more space for manufacturing and storage.

Tiger Mfg. Co., manufacturers of the widely used Battery Powered Winch and Porta-Model Generator, have recently added features to the Army and Marine Corp "Mechanical Mule." With a swing boom and fork lift powered by the Tiger battery powered winch and a specially designed generator and self starter the mule can now load and unload cargo as well as transport it.

The new phone number of Tiger Mfg. Co. is HEmlock 6-9723.

In Memoriam

ALBERT S. JOHNSTON

Albert S. Johnston, 76, pioneer California oil driller, died Sunday, August 16th at his home, 1022 Cartagena Street, Long Beach, Calif., after a lengthy illness. He was president and owner of the A. S. Johnston Drilling Corp. Born in White Bluff, Tenn., Johnston started to work in the oil fields near Beaumont Texas, in 1900 and moved to the Taft, California fields in 1909. He went to Long Beach in 1922 and brought in more than 100 oil wells in the Signal Hill area.

THIS LAUGH OFF!!

"Why didn't you report the robbery at once?" the insurance agent asked a woman claimant. "Didn't you suspect something when you came home and discovered all the drawers opened and the contents scattered?"

"Not really," she replied. "I thought my husband had been looking for a clean shirt."

Lawyer: "You say that you want to get a divorce on the grounds that your husband is careless about his appearance?"

Client: "Yes, he hasn't showed up in nearly two years."

A problem child was becoming too well acquainted with the principal's office. One day the principal showed her annoyance.

"This makes the fifth time I have punished you this week. What have you to say for yourself?"

"I'm glad it's Friday.'"

A pretty young hillbilly girl caught the eye of a visiting geologist. He wooed her, won her, and married her in a few short weeks, and her wedding night in the nearest large city was the first time she had ever left her native hills.

On the threshold of the bridal suite, the girl suddenly blushed and hung back.

"What's the matter, darling?" asked the groom.

"Oh, nothin," she replied. "It's jist that this hyer room has two beds in it, and I'd sorter hoped we'd git a room to ourselves."

The day was rainy and the cellar leaked. Billie, five, was having a wonderful time sloshing around in the water when his mother caught him, soaked to the skin. As a punishment, he was ordered to stay in his room until his pants were dry.

A short time later his mother heard a commotion in the basement.

"Are you down there wetting your pants again?" she bellowed.

There was a long pause and a deep masculine voice replied:

"No, I'm just reading the meter."

A lonely chick, taking a turn around the electric incubator of unhatched eggs: "Well, it looks like I'll be an only child. Mother's blown a fuse."

A cranky old man invested in one of the new hearing aids that are almost invisible. A few days later he returned to the store to express his delight.

"I'll bet your family likes it too," said the salesman.

"Oh, they don't know I've got it," said the old fellow. "And am I having fun! In the past two days I've changed my will twice!"

A little man came home unexpectedly to find his wife in the arms of another man. Seizing the man's umbrella our hero raised it high above his head with both hands then brought it down sharply over his own knee. It broke in two. "There," cried the little man, "I hope it rains."

"Doctor," said the old gentleman as he entered the physician's office. "I've got to have a bloodtest. I'm going to get married."

The doctor eyed him admiringly. "Married?" he asked. "How old are you anyway?"

"I'm 78."

"And the bride—?"

"Oh, she's only 22.'"

"Only 22?" cried the doctor. "Why, that kind of disparity could be fatal."

"Well," shrugged the old man philosophically, "if she dies, she dies."

An old timer, driving an antique car, was hailed into court. The judge boomed: "$12.50 for speeding!"

The Old Timer, amazed and incredulous, handed over $25.

The judge reminded him that the fine was only half that amount. The Old Timer replied: "I know, but I have to come back this way."

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- ★ Higher counting rate of Scintillometer appreciably reduces statistical fluctuation, gives superior resolution and results in higher quality, more efficient logs with excellent repeatability.
- ★ Effect of invaded zone and well fluid is minimized and the sphere of investigation is focused on the original nature and content of the formation.
- ★ Porosity is determined with a higher degree of reliability.
- ★ Rugged, shock-proof design assures dependable operation.

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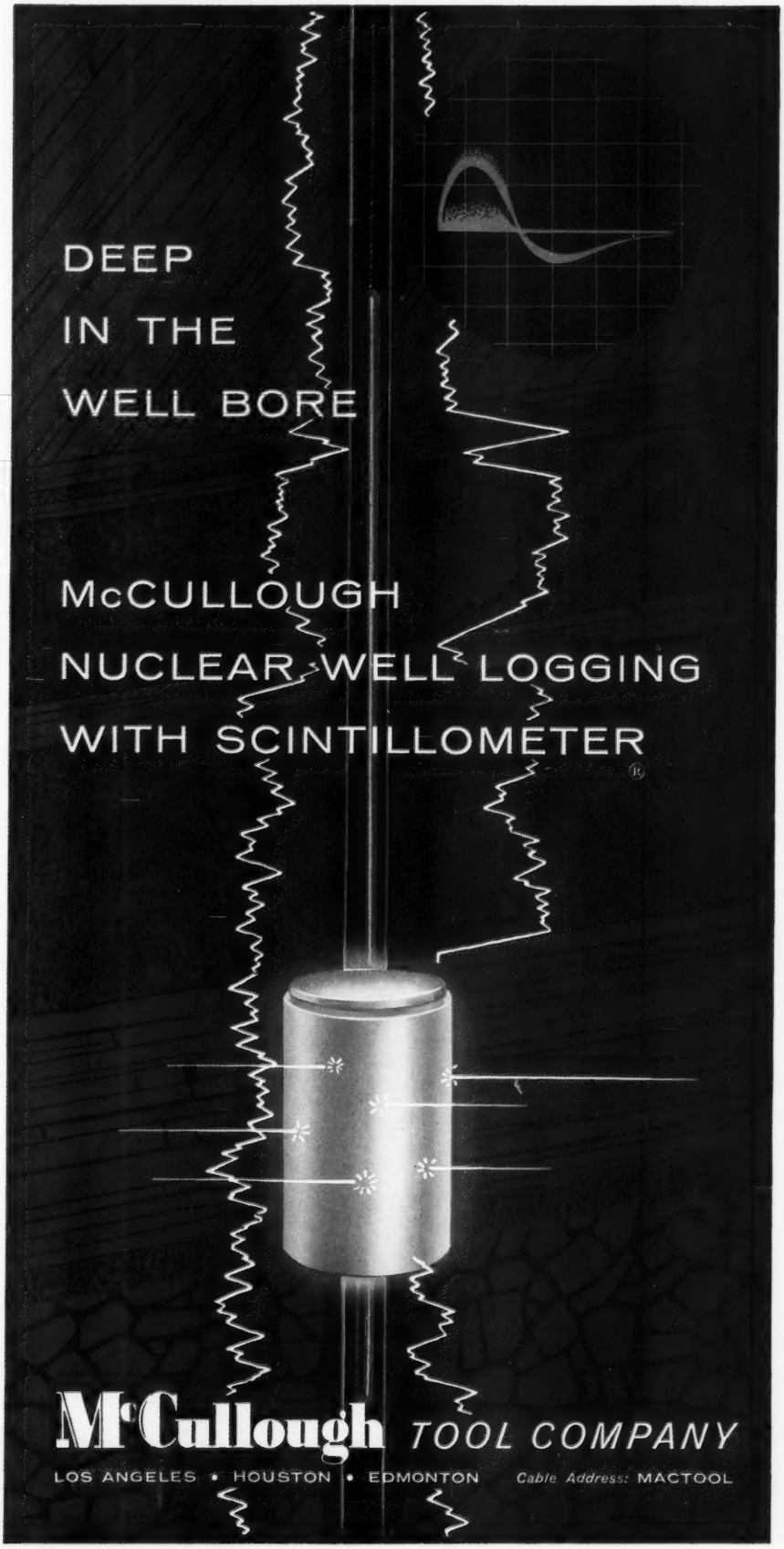

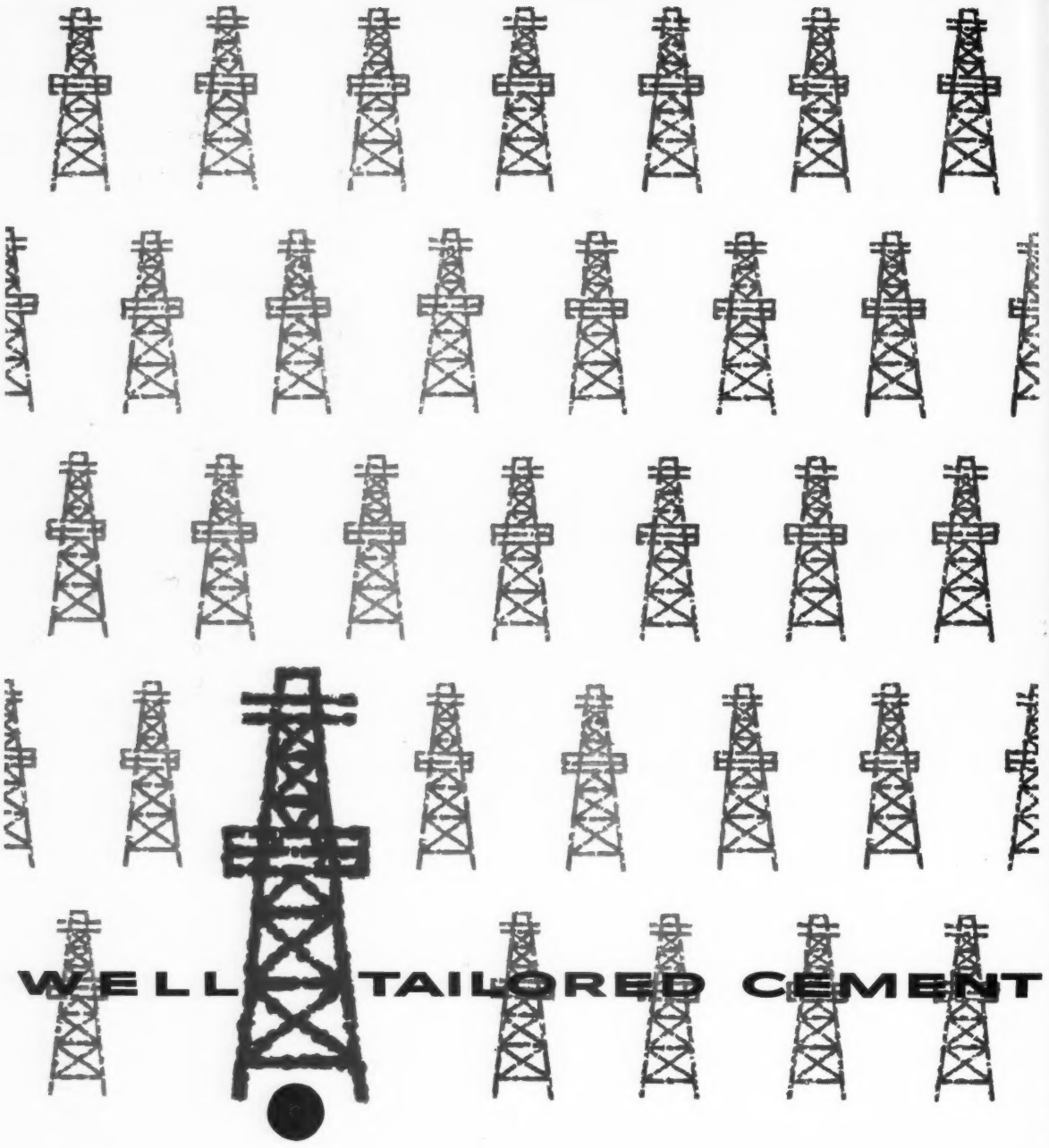

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